Industrial FINISHING

To Finish NIFTY,
yet THRIFTY,
in '50...
LILLY
1950
Remember the Lilly Key. It represents specific finishes for specific products and purposes, which means — quality finishing with dependable finishes, at reasonable cost. You pay no premium for a Lilly finish especially formulated to meet your own individual require-ments.
THE Lilly FINISHES
VARNISH COMPANY
Indianapolis, Indiana • Gardner, Mass.
THE LILLY COMPANY • High Point, N. C.

Interchemical *Finishes*

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!

MAIN OFFICE: 350 FIFTH AVENUE, NEW YORK, N. Y.
FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELES

Ault and Wiborg, Murphy, Roxalin and IC are trademarks of Interchemical Corporation.

NEARLY EVERYTHING
that we use or wear is made with AIR
as treated and handled for industry by
ROSS
Air Systems
Leading manufacturers in practically all industries are users of ROSS Air Systems. Through the scientific use of AIR — heated, cooled or conditioned — speedier processing and greater uniformity of finished product is assured. Substantial savings in time, labor and fuel costs are effected.
Utilize the advantages of controlled air for processing in your manufacturing operations.
Tell us the type of product you make. We will send literature describing ROSS apparatus being used in your industry. Write now!
ROSS RS SYSTEMS
J. O. ROSS ENGINEERING
CORPORATION
MANUFACTURERS OF AIR PROCESSING SYSTEMS
350 MADISON AVENUE
NEW YORK 17, N. Y.
201 N. Wells Street, CHICAGO-6 • 79 Milk Street, BOSTON-9 • 9225 Grand River Avenue, DETROIT-4 • 600 St. Paul Avenue, LOS ANGELES-14
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

The Finish Reflects the Charm of this Dining Room Group by UNIQUE

The Unique Furniture Maker's solid mahogany Junior Dining Room Group was specially designed to meet the needs of the smaller home owner who appreciates fine furniture. In the same way, the studio facilities of the Grand Rapids Varnish Corporation created the finish specially for this group. This is another outstanding example of the way in which we work hand in hand with the manufacturer to create the finest quality finishes that are both practical and economical in production . . . appealing to the discriminating customer.

For further information regarding our studio facilities and services, please write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
***Makers of the Famous* Guardsman Finish *and* Guardsman Cleaning Polish**

Published
the 18th of each month by
PRACTICAL PUBLICATIONS
Incorporated
1142 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

Contents

JANUARY, 1950
Vol. XXVI, No. 3

CCA

tributed monthly to finishing
m and paint shop foremen,
duction superintendents,
mists, purchasing agents and
npany executives of industrial
nts where production cleaning
finishing are major opera-
s in the manufacture of parts
products.

★

ubscription Rates Per Year
S. and Possessions.....$2.00
nada and Foreign
Countries $4.00
o subscription soliciters are
employed)

★

sident.....W. H. Rohr
-President.....E. A. Dosch
.-Treas.....R. E. Suits

★

Eastern Representative
C. A. LARSON
254 West 31st St.
New York 1, N. Y.
Phone: Longacre 4-4285
4-4286

West Coast Representatives
IPSON-REILLY LTD.
Halliburton Building,
os Angeles 14, Calif.
elephone: Dunkirk 8-1179
uss Building,
an Francisco 4, Calif.
elephone: Douglas 2-4994
ew World Life Bldg.,
eattle 4, Wash.
elephone: Seneca 6753

Random Comment on the Industrial Scene 4
Combination Electric Infra-Red and Gas Oven Bakes Paint on Aluminum 10
Pan Cleaning and Glazing 26
Ditto Duplicating Machines Finished in Wrinkle Enamel 38
Luminescent Paints (Part II) 44
Finishing Plastic Panels for Automobile Interiors 56
Finishing Oak Products 66
Planning, Decorating and Finishing Fine Custom Made Furniture 72
Letters from Readers 82
Questions and Answers 90
Materials; Supplies; Equipment 100
Editorial 118
"Classified Advertising" Section 126
Advertisers Index 128

DuBois, Cincinnati, Acquires Giant Products, Los Angeles 42
Metal Cleaning Solved by Specialists 43
Losaw Represents Monroe Sander Corp. in New Jersey 54
Egyptian Expansion Program Continues 54
Crown Oil and A. J. Wittenberg Corp. Merged 62
Corrosion and Chemical Resistant Coatings for Tanks 70
U. S. Testing Co. and Esselen Research Corp. Merged 79
Wolverine Finishes Corp. Has New Lacquer Plant 79
Production Mfg. for P. P. G. Co. Paint Division 81
G. S. Forbes Becomes Mgr. of Glidden Indus. Sales 81
Straight Centrifugal Pumps Added by Marlow 81
Batzel & Glaser Named V.P.s Midland Industrial Finishes 98
Can it be Sprayed Automatically? 111
Ferro's Cleaning Compounds Transferred to MacDermid 111
Crawford Now Indus. Sales Mgr. of Standard Varnish 114
Infra-Red Drying Setup in Auto Paint Shop 116
To "Measure" Color Accurately 124
To Save Stripping Off Checked Finish 124
C. E. Drew Represents DuPont in Iowa 125
The Science of Wrinkle Finishing 125
Cowles Conducts Metal Cleaner Clinic 125

Acceptance under Section 34.64, P. L. & R., authorized

26 TWENTY-SIXTH YEAR OF PUBLICATION

New Year Resolution time is at hand. It seems fitting and proper that industry heed the advice of Frank W. Abrams, chairman of the Standard Oil Co. of New Jersey, when he told a group of industrial leaders that preposterous attacks on corporations will continue to be widely believed until industry becomes more sensitive to the needs of the public. Business has become so involved within itself that it has failed to understand the human side of life.

Therefore be it resolved that we will not kill John Q. Public with kindness, but lets "court" him a little.

* * *

No-Bake Finish. Manufacturers of products requiring a decorative finish will be interested in a new compound that can be mixed with gold or silver powder for application on glass, china, pottery, wood or metal, without the need for high temperature firing or baking. A second coat of the compound can be applied to give extra wear and washing resistance.

* * *

A Moisture Meter for determining the moisture content of leather has been developed in the tanners' Council of America research laboratory at the University of Cincinnati. This laboratory is a world center for leather research.

In buying, selling and processing of leather, moisture content is of extreme importance. In the past, man's judgment based upon feel, and rule-of-thumb methods had to be relied upon. With this new portable electronic meter, reasonably accurate figures are instantaneously available without damage to the leather. The meter is about the same size and weight as a portable radio. Announcement of the development was made by Dr. Fred O'Flaherty, director of the laboratory.

Manufacturers of leather top tables and other leather covered products should find this meter especially useful in their finishing operations.

* * *

Odorless Paint suitable for use in offices and dwellings has been developed. The manufacturer states that six hours after it is applied, the room or office can be occupied with no discomfort. No deodorant nor perfume is used. The new odorless property is achieved through formulation.

* * *

A Rust Inhibitor for light oil products in pipe lines and storage tanks is now in development process. It is a hydrocarbon-soluble, water-insoluble, non-metallic, organic material. Tests on its complete effectiveness are now in progress.

* * *

A New Steel Alloy is announced which will withstand blazing heat or temperatures as low as 423° F. below zero. It is said to be an anstenitic cast ferrous alloy containing among other constituents 19½% chromium and 9% nickel. *(To page 6)*

Dolan's 35% HI-SOLIDS LACQUER

. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.

OUTSTANDING!!

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing. Write us for 5 gallons at drum price!

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

BErkshire 7-0100

NEW!

DIFFERENT!!

BETTER!!!

ALLIED'S Electro Cold Stripper is not "just another" paint remover but has been formulated along radically different lines to do an outstanding job on the production line.

Removes paints, lacquers, enamels, synthetics and wrinkles while you watch. The finish actually "pops off." Especially effective on hard-to-remove baked-type finishes. It is made to handle really tough jobs.

NON-INFLAMMABLE. Non-injurious to hands or metal in time required for removal of paint film.

Simply dip, shake well and dry. Then wash with pressure stream of water or wipe well with rag and refinish immediately. Leaves no "after film."

Many industrial users tell us this is the best Stripper they have ever used. Perhaps it will help you solve YOUR problems, too!

Write for sample and quotations—or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.

2641 W. Grand Ave., Chicago 12

Up to now it has been used effectively in storage facilities for liquid oxygen, the propellant for rocket engines. Other uses will be found where extremes in temperature are an important factor.

* * *

A Printing Device called "Rap-Ad" is available. It is said to bridge the gap between the rubber stamp and the printing press. A feature of this setup is a newly invented ink that dries immediately and cannot be smudged. Should be useful for bulletins, intercoms and small house organs.

* * *

Textile Test Equivalents have been compiled by Hatch Textile Research Laboratory. These tables indicate the estimated sunlight equivalents of fade-ometer exposures for the four seasons of the year and minimum fade-ometer tolerances for textile products.

* * *

A New Type of Furniture was recently exhibited in New York. It is small and flexible enough to satisfy the ever changing apartment house dwellers. Some pieces are all in wood; others are in combined wood and metal, and metal and upholstery.

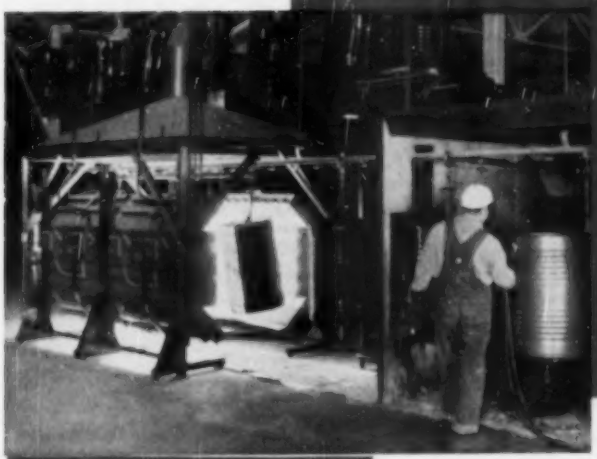
One interesting piece is a table that can be stretched out telescope fashion from four to 48-in. in length. A collapsing metal love seat with foam rubber cushions makes for easy moving. Then there are walnut chests with bronze bolts and end handles sunk into the wood, with felt on the bottom for stacking one chest on another, or three or more may be stacked to form a storage wall. Each unit is 16-in. high.

* * *

Window Coating. A plastic known as "infracote" is said to prevent fading of furniture and fabrics. It can

INFRA-RED

VERSATILE QUICK CUTS COSTS



METAL DRUM FINISHING
Photo at left shows EVENRAY baking black [illegible] in 3 minutes — 360 drums in 8 hours.

EXPERIENCE OF OVER 6,000 PLANTS PROVES FOSTORIA SUPERIORITY

- Lowest Unit Operating Cost.
- Most Uniform Coverage.
- Max. Temperature Range.
- Max. Energy Utilization.
- Greatest Flexibility.
- Approved Electrical Construction. Listed by Underwriters' Laboratories, Inc.

GET THE FACTS

Technical information and literature available on request. WRITE NOW. Learn how EVENRAY can aid your production.

Infra-red provides many advantages not present in other industrial heating methods. But, it takes equipment that is properly engineered to fully utilize these inherent advantages. Fostoria EVENRAY Systems are the most efficient Infra-red equipment — definitely proved by over 6,000 installations for paint baking, dry-off, degreasing, and preheating. You can save with EVENRAY.

THE FOSTORIA PRESSED STEEL CORP.

FOSTORIA, OHIO

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

EVENRAY SYSTEM
fostoria
FOR BAKING • DRYING • PREHEATING • DEHYDRATING

Trade Mark Reg. U. S. Pat. Off.

Industry's 3 Newest

COLD STRIPPERS

Fast! Economical! Safe! New!

"UNISOL"—for removing all baked enamels! Used cold—Non-inflammable—Non toxic—Strips baked enamels in seconds—Used for all type metals—Requires no rinse—Non-injurious to hands or clothing.

"UNISOL No. 2"—A new cold stripper for japans and vinyls—Non-inflammable—Strips tough japans and vinyls in matter of minutes—Used for all type metals.

"STRIPPER 202"—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non-inflammable—Used cold—Non toxic.

Samples and further information supplied on request.

CHEMCO PRODUCTS CO., Inc.

7740 WEST 47TH STREET LYONS, ILLINOIS

**Special Requirements*

DESIGNED & BUILT By . . . . . LANLY

Twin tunnel—"U" shaped—Gas fired. Used for baking paint on metal signs carried on racks suspended from overhead monorails.

LANLY welcomes inquiries pertaining to special or general problems on paint baking, dry-off, burn-off, etc.

THE LANLY COMPANY, 760 Prospect Avenue, CLEVELAND, OHIO

be applied to transparent surfaces with virtually no loss of visibility. In sunlight it turns to a faint yellow and becomes colorless again when not exposed to the sun's rays. It also reduces glare and heat.

This material should prove valuable in drafting rooms, factories, offices and show rooms, as well as for retail stores.

* * *

New Rubber Whistle. Toy manufacturers especially will be interested in a new all-rubber whistle for squeeze toys. The new latex rubber whistle replaces the metal types which were easily torn or removed from the toys by little fingers.

* * *

Impregnated Leather. Rene Oehler, Timothy J. Kilduff and Sverre Dahl of the Bureau of Standards have developed a process for treating leather with natural rubber. This rubber treated leather lasts longer than untreated leather, and is better able to resist abrasion and water. Impregnation is accomplished by immersing the naturally porous leather in a solution of natural rubber.

* * *

Decal for Textiles has recently appeared on the market. In the past, decals have been applied to smooth rigid materials such as metal, wood, plastic and glass. This new decal can be applied directly to the fabric with an ordinary electric iron.

* * *

Fireproof Suit. A suit designed to keep aircraft crash firemen at "a cool 130° F. of body temperature" while working in a flaming inferno of gasoline and oil that registers a sizzling 2000° F., has just been put through a series of successful tests by the

(Continued on page 114)

No danger of fire

No after-wash needed

. . . when you use

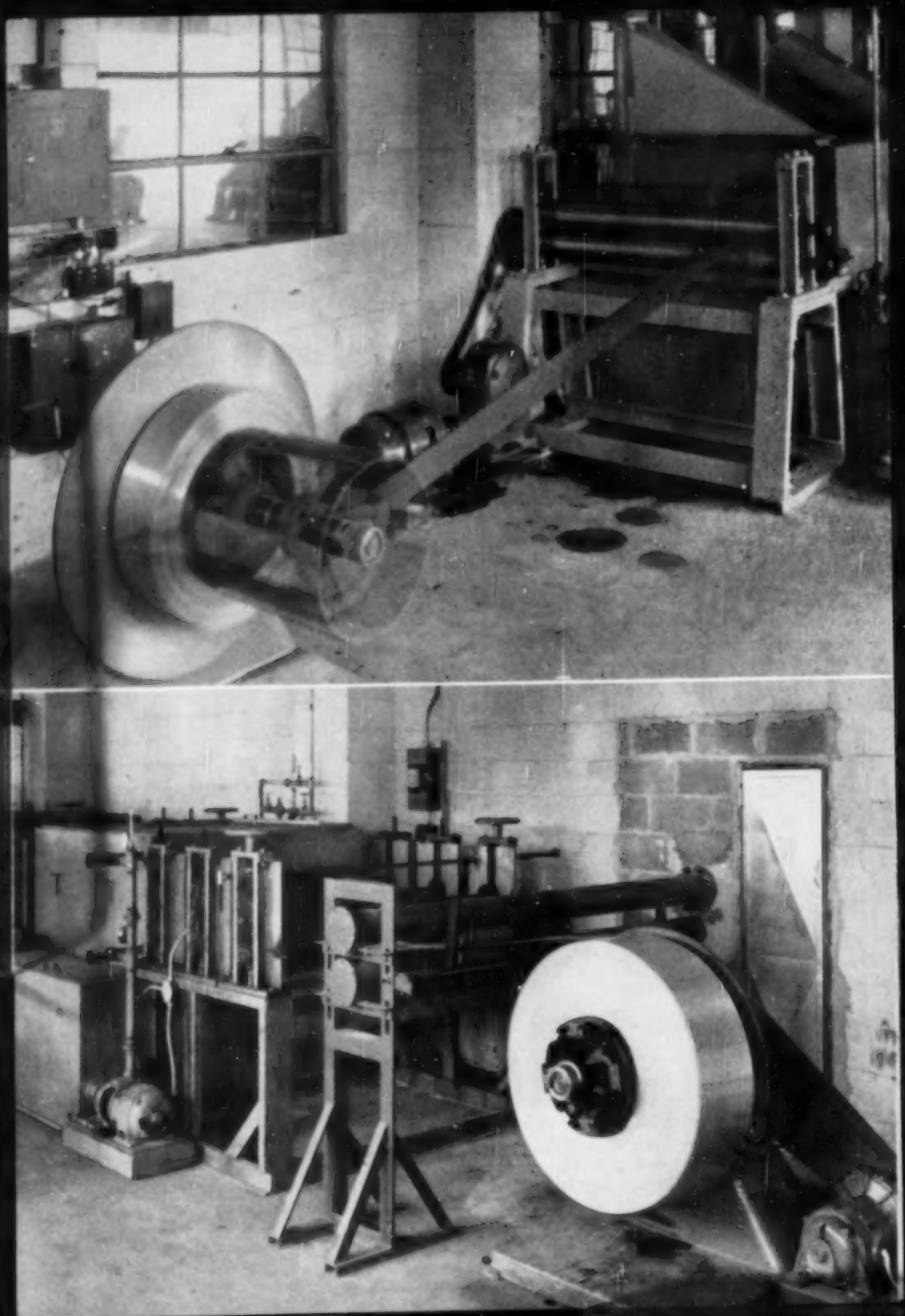
SAF-TE

NON-BURNING REMOVER

Removes any type of finish, yet it simply will not burn. Consult us regarding your removing problems.

WILSON-IMPERIAL CO.,
125 Chestnut St., Newark 5, N. J.

WILSON-IMPERIAL CO.,
125 Chestnut St., Newark 5, N. J.
We are interested in stripping finishes
from_____
Type of Finish_____
Name_____
Company_____
Street_____
City_____ State_____



Combination Electric Infra-Red and Gas Oven

BAKES PAINT ON ALUMINUM

By William J. Miskella

The Miskella Infra-Red Company

A setup developed for cleaning, surface treating, roller coating, baking the finish and forming aluminum strips into siding of cut lengths, with all nail holes punched in, and ready to use.

HERE IS A sensation in the finishing industry. For about two years experiments have been going on to find out what would be the best suited equipment for the job.

Basically the problem was to produce, in large quantities, aluminum house siding with an attractive and durable baked finish—one that will stand outside exposure. The first idea that came to mind was to roll-form the siding, cut it to length, and then spray the enamel automatically as standardized lengths of siding moved along by conveyor.

Next, preliminary studies were made on processing coiled aluminum in the flat, applying the enamel by a roller coating machine, and finally forming the siding afterward. Many difficulties had to be overcome, starting with that of oven heat. Heavy synthetic enamel leaves the roller coater in furrows like a plowed field—or like corduroy

Fig. 1—A section of insulated infra-red oven containing units like those shown in Fig. 2. Notice the access door at top.

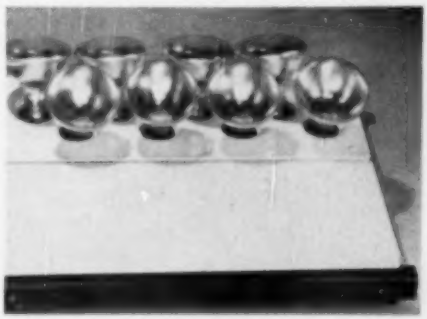


Fig. 2—Typical unit of infra-red lamps from which oven panels are made up.

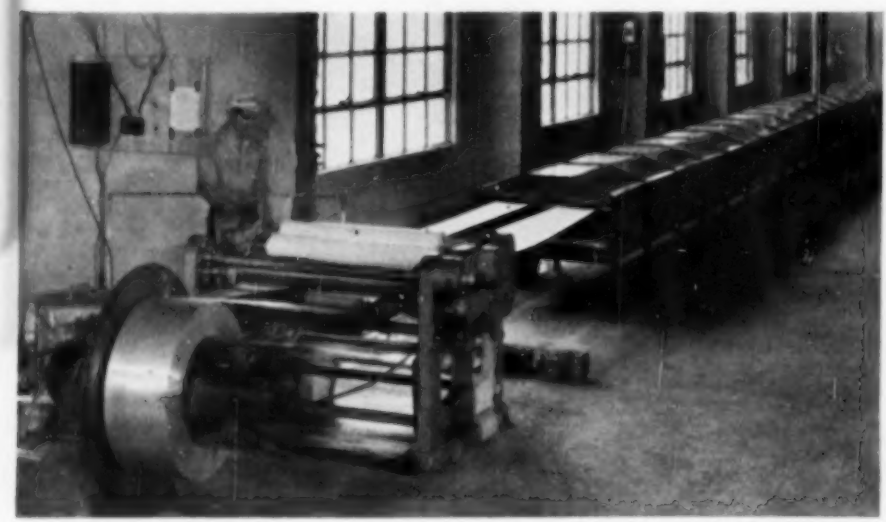
Pictures on opposite page show infeed (at top) and outfeed (at bottom) of 6-stage metal cleaning and surface treating setup through which aluminum strips move at the rate of 60-ft. per minute. Stages include: cleaning solution; cold rinse; chemical treatment; cold rinse; acidulated rinse and hot-air cooling. The winding-up (rewind) roll at outfeed end (lower right) is power driven.

cloth. It doesn't require a magnifying glass to see the ridges; they are easily visible to the naked eye and would be visible in the final baked finish if something were not done to eliminate them.

Preheating Coated Metal Smooths Film of Enamel

Here is what was done to kill the corduroy effect: After leaving the roller coater, the strips of aluminum are gradually warmed with reflector-directed angular infra-red heat, as the twin strips move forward and into a specially designed and insulated infra-red oven which has its heat lamps located as shown in the section marked Fig. 1. Heat is applied to the unfinished but chemically treated aluminum strips as they are pulled through the long oven by means of power winches at the out-feeding end. The coated side is up and it lies flat, so that ridges in the enamel can flow out and disappear in a smooth film of finish. Fumes that arise are collected in the oven cupola and removed through vertical stacks. Hinged side doors on the top permit easy access to the strips in process and make servicing of the lamps easy.

By studying the basic section shown in Fig. 1, several points may be observed. Its width is 36-in., and the length of each typical panel is 42-in. Several combinations of lamps are possible in this insulated lamp panel. You may use: 1) all lamps; 2) all blanks; 3) one lamp section and three blanks; or 4) two lamped and two blank sections alternately, or 5) two lamped sections separated by two blank sections. It should be noted that these standard panels of four units are framed so



Two rolls (only one shows here at lower left) are unwinding as cleaned strips of aluminum enter and pass through the roller coater and long infra-red electric oven. Only the top side is painted. Strips pass through this setup at the rate of 38-ft. per minute.

Whatever it is
IF IT'S MADE OF
Metal

YOU'll FINISH
FASTER • CHEAPER • BETTER
with a Schmieg *planned*

CENTRI MERGE FINISHING SYSTEM

FINISHING has a highly important bearing on the sale of your product if APPEARANCE is a factor in its acceptance. Obsolete, inadequate finishing equipment improperly laid out, not only makes for inefficient finishing and consequent poor appearance—it materially adds to manufacturing cost.

Equipment for metal washing, bonderizing,* dry-off, spray painting, baking, as developed by Schmieg engineers, is planned precisely for your plant and product—coordinated into a speedy, smooth-flowing production unit that saves time—space—and operating expense. Schmieg has the years of engineering experience, knowledge of modern methods and the facilities for seeing the job through—from initial designs to completed machines, set up and ready to operate in your plant.

*Trade Mark of Parker Rust Proof Co.

Our engineers will be pleased to consult with you in the solution of your problem.

AIR PURGE
CENTRI MERGE

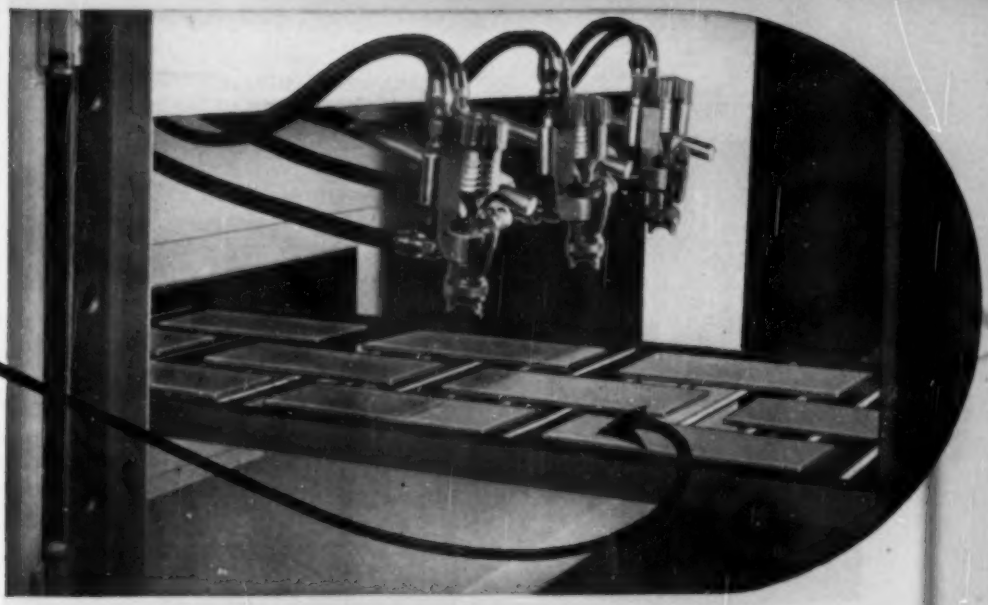
Schmieg INDUSTRIES INC.
Engineers & Manufacturers

UNIFORM PAINTING HOUR-AFTER-HOUR

Manufacturing costs drop, production increases when you put this Automatic DeVilbiss Spray Gun to work. Painting is more uniform and faster, and you get fewer rejects. DeVilbiss Automatic Guns never develop tired eyes and sagging muscles towards the shift's end.

The DeVilbiss AGA Automatic is *the* gun for production painting lines. It is faster-acting, more dependable. It's specially designed to withstand the heavy demands of high production. It is easier to adjust and keep adjusted for perfect spray-painting, even under severe vibration.

Practically any product made in production-line quanti-



ties can be painted better, faster, cheaper with an automatic set-up. DeVilbiss engineers will be glad to work with you and your production men to design efficient automatic finishing systems which speed production and lower costs. Write today for information.

THE DEVILBISS COMPANY • Toledo 1, Ohio

Canadian Plant: WINDSOR, ONTARIO

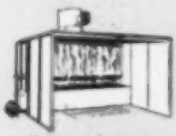
DE VILBISS

means QUALITY in all four

DV

Spray Equipment

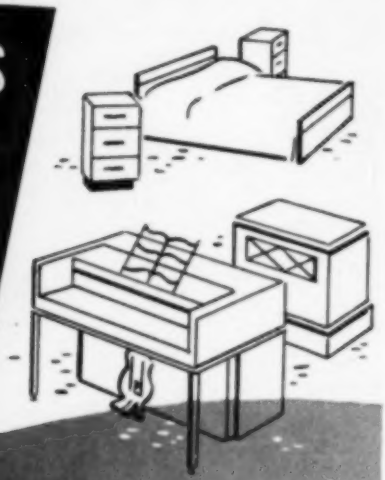
Air Compressors



Exhaust Systems

Hose and Connections

USE HIGH SOLIDS CLEAR LACQUERS *by* O'Neil Duro FOR



UNUSUAL WORKABILITY

●

LOW MILEAGE COST

●

EXCEPTIONAL COLD CHECK RESISTANCE

●

LASTING BEAUTY

●

Write for complete information and sample panel.

SYN-POR DURO FINISH

High Solids Clear Lacquers by O'Neil Duro have solved many a production problem. Furniture, desk, radio cabinet, piano manufacturers — ad infinitum — choose these lacquers for their workability — lower mileage cost for the same film thickness as compared with the best low solids lacquers. Many of these manufacturers use one coat because it does the work of two.

High Solids Clear Lacquers are obtainable in all degrees of sheen — high gloss — semi-gloss — rubbed effect — satin — flat. They can be formulated to fill the need of the job.

Manufacturers of Enamels and Lacquers for over 50 years.

O'NEIL DURO COMPANY

MILWAUKEE 7, WISCONSIN

they can be removed and changed to any one of the groupings mentioned. They are laid in place—not fastened—a great testimonial for the flexibility of these insulated-reflective stock units or sections.

Experimenting to Find Best Arrangement of Lamps

With this extreme flexibility, it was possible to experimentally determine the proper arrangement of lamps and blanks to eliminate the corduroy effect produced by spreading a heavy coat of synthetic enamel with rollers. It resulted in first using several blank panels at the infeed end of the oven, just to gain advantage of the low convection heat present, with no lamps connected.

Next, a few panels were used with one lamped section in a group of four. The heat was stepped up a little more by using a panel made up of two lamped sections and two blank sections in the second set of panels. As soon as the corduroy effect flowed out smoothly, more heat was applied by using many sections of fully lamped panels having 48 250-watt lamps, or a heat delivery equal to approximately one kilowatt per square foot of insulated-reflective infra-red panel construction.

A temperature of 350° F. was needed to fully cure one of the enamels used. After the peak of the curve was reached, a long sloping slow-down of the temperature was secured by reversing the combinations of lamps and blanks, as previously described here in getting the product up to heat.

Finally, the setup was so arranged that thousands of feet of enameled siding could be produced at a speed of 38-ft. per minute, and with the work in the oven only about four minutes. However, the

Outfeed end of infra-red oven, as originally set up. Power driven rewind rolls are at lower right. A cooling arrangement is located between exit of oven and the rewind rolls.

customer insisted upon cutting these figures at least in half to secure his production demands, and that is how our plan for gas heat came in.

Why the Combination of Infra-Red and Gas Heat

So, here for the first time to my knowledge, we have a convection gas oven teaming up with reflector-directed electric infra-red heat to produce the results desired. By the time you read this article this combination will probably be in operation in the continuous production of enameled aluminum siding, with a time period in the oven of only two minutes, or possibly 1½ minutes.

First of all, the new demand for only two minutes baking time could not be made with reflector-directed infra-red heat originating in the filaments of lamps, since the oven could not be contained in the long building *previously* built to house the lamped infra-red setup.

Second, infra-red lamps are limited in their ability to economically deliver temperatures beyond 400° F. Of course, many lamped infra-red ovens are operating in the range between 400° F. and 600° F., but their efficiency is low. An outstanding factor is the life of the lamps. In the case of 250-watt lamps (the production item of the infra-red industry) an average life of 5000 hours is the rule; but replace those 250-watt lamps with 375-watt lamps, and you will be fortunate if they have a useful life of 1000 hours. With 500-watt lamps, the situation is likely to be still shorter life for the lamps.

Different Makes of Lamps in Hook-up Caused Trouble

At this point, it might be well to mention an unusual experience with the heat lamps on this aluminum siding job. When lamp salesmen discovered, through the grape vine, that a job existed which would require as many as 900 heat lamps, they began to hound the customer. Unfortunately, the buyer thought

Over-all view of 6-stage metal cleaning and surface conditioning setup; infeed at the left.

CLINCO
Top quality
industrial lacquers
and enamels
The Sign of
CLINCO
Highest Quality
CLINCO
INDUSTRIAL
FINISHES
THE CLINTON COMPANY
THE CLINTON COMPANY
1210 ELSTON AVE. • CHICAGO 22, ILLINOIS

he was doing the correct thing by ordering sample lots, which he placed in service in the oven for test purposes. Soon, lamp troubles of all kinds began to multiply—with all sorts of conjecture and opinion as to the causes. However, none of the "sidewalk superintendents" came up with the right answer, which was so obvious.

The oven was wired for 440-volts, with four 115-volt 250-watt lamps in series. All was well when all of the lamps were identical in efficiency and resistance, but the resistance of the cold and hot filaments of the various lamps (some carbon and some tungsten filaments) varied widely. In fact, no two makes were alike.

You may recall some the similar experiences people had with long strings of Christmas tree lights in series. Anyway, when the resistance of any one lamp in the set of four was low, the powerful 440-volt pressure went to work surging back and forth like angry ocean waves, until the law of "survival of the fittest" went into effect.

What Was Done to Meet Demand for Fast Bake

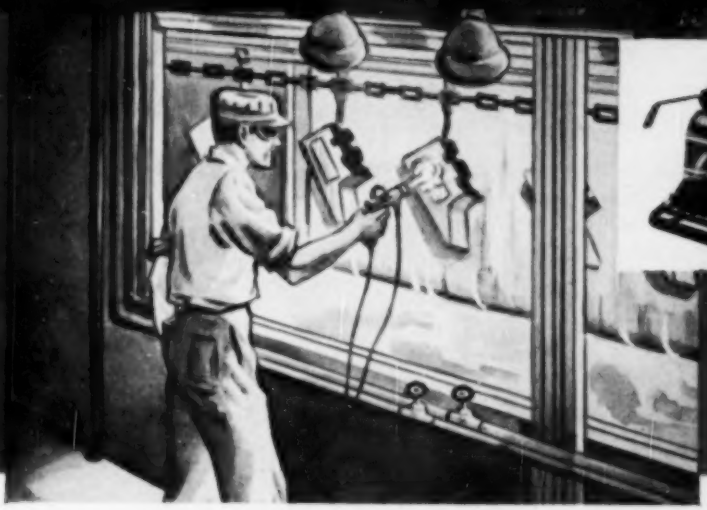
It should be explained that the demand for a quality baked finish in two minutes instead of four minutes called for delivery of a heat of about 600° F., which could be readily furnished by gas-heated hot air within a properly designed and well insulated gas oven. This does not mean that the work will actually be heated to 600° F.; only if it stood still in the oven would or could 600° F. of heat be delivered to the metal.

With the strips moving through, each at a speed of 38-ft. per minute, they will net a metal temperature not to exceed 380° F. This can be readily accomplished with gas; and that portion of the job should not be attempted with infra-red lamps. On the other hand, gas cannot bring the metal up to heat so quickly, therefore the first portion of the job should and is being assigned to infra-red lamps. Where the point will come that infra-red leaves off and gas takes over, is still a matter of conjecture. It will not be known until practical tests are made in production. Anyway, a combination of the two forms of heat energy is in the final setup.

In one of the accompanying pictures it will be noticed that a long space exists between the out-feed end of the infra-red oven and the rewinder. The first thought was that this space would be sufficient distance for cooling by room air, to prevent the finished coat from being marred on the winding reel by the unfinished back of the flat strip, but a water spray setup had to be introduced. This may be replaced by another form of cooling later.

Heating Before Forming Prevents Damage to Finish

Now, we are up to the toughest problem of all—that of forming the almost sharp right-angle "nose" along one edge of the aluminum siding; in other words, the forming of a shape that makes aluminum siding look like ordinary wooden house siding. Many paint formulas were tried in order to get a coating that would not be damaged by the series of forming rolls in the ma-



Rejects and Refinishings *Cut Almost* 30%

L. C. SMITH & CORONA TYPEWRITERS, INC. DISCOVERS AN ATTRACTIVE FINISH THAT'S REALLY MAR-PROOF

PROBLEM: Scratches and abrasion marks occurring on the assembly line and in shipping, caused too many costly rejections—time-consuming refinishing.

SOLUTION: After tests, L. C. Smith Sales and Engineering Departments approved Standard Varnish Work's gray metallic #7302 finish, saying it was the best metallic finish for maximum mar-resistance, plus real eye-appeal.

TYPICAL APPLICATIONS: All types of business machines, office furniture and electrical, heating and laboratory equipment. Sprays on readily. Bakes thoroughly at 250° F. in 75 minutes.

Thousands of formulae on hand in our files to solve your finishing problems. Extensive laboratory facilities and large technical staff ready to develop and test finishes on your products. Write today for free Technical Data Sheet on our Gray Metallic #7302 Finish. Or, send your products to us for finish specification and testing.

STANDARD VARNISH WORKS

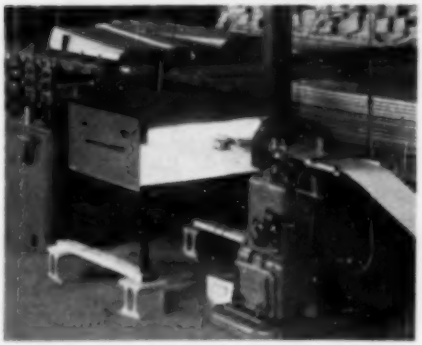
ENGINEERS OF FINE INDUSTRIAL FINISHES

SINCE 1870

NEW YORK LINDEN, N. J. CHICAGO

chine. It was not until a section of infra-red lamps (Fig. 1) was placed ahead of the forming machine to preheat the cold enamel on the face, that success was attained. For a long time, it looked as if the entire process would fail at this point, but electric infra-red heat came to the rescue.

The picture story indicated here is complete up to about November 1, 1949. The gas-fired equipment mentioned has been ordered and is probably in operation now. The gas heat application is not exactly a pioneer one here, since the same practice has been in use on other strip material, such as Venetian blind stock, for a long time. However, preheating with infra-red has not been practiced on Venetian blind stock—that is, not to my knowledge—so it is likely that the knowledge gained in processing aluminum siding will be reflected back into Venetian blind processing, with corresponding increases in production.



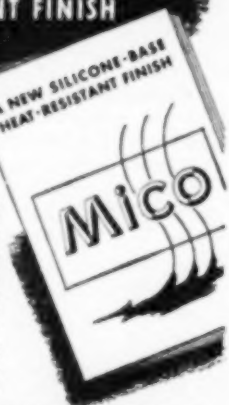
Where enameled siding enters forming rolls—12 sets of them. Machine at right punches nail holes. Next a section of infra-red oven applies heat to "condition" the hard cold enamel coating so it will be more flexible and tough when the aluminum strip passes through the forming rolls. This preliminary "conditioning" of the enamel coating prevents it from cracking, breaking, chipping or being damaged while the metal is being formed by the rollers. At the outfeed end of forming machine another machine automatically cuts the siding into standard lengths.

The period covered by this story has etxended back over more than 18 months. Originally it was intended to run three 10½-in. strips of aluminum through the oven—which accounts for its 36-in. width—but it was found that the associated machinery would work better with only two strips of metal going through. Should a new infra-red oven be made, about one third less lamps would be required for processing the two strips, as shown in the photographs.

NEW
SILICONE-BASE
HEAT RESISTANT FINISH

MICO Aluminum hailed by leading manufacturers as the most heat-stable finish ever to be developed for every day commercial use.

NOW—a heat resistant finish that protects—*actually doubles the life*—of vital parts in hundreds of products like mufflers, engines, boilers, ovens, oil and gas burners. MICO Aluminum has passed 25 different tests for thermal, chemical, and physical stability, and has thoroughly proved itself on the production line. *Investigate* MICO. *Get the facts!* Write today for your copy of the new MICO folder . . .



"MICO . . . THE SILICONE BASE FINISH THAT WITHSTANDS 1000° (F.)—WITHOUT SURFACE BREAKDOWN.

Manufactured Exclusively by
MIDLAND INDUSTRIAL FINISHES COMPANY
Dept. IF-1 Waukegan, Illinois
ENAMELS • SYNTHETICS • LACQUERS • VARNISHES

Finishing Time Saved..IS MONEY EARNED!

SURPRISINGLY ADAPTABLE this Jensen Finishing System coordinates a Jensen loop-around conveyor and "Dual Heat" oven. Bakes 18" square black enameled water cooler frames and hammerloid finished side panels together, in only 4 minutes!

A *COORDINATED* JENSEN FINISHING SYSTEM AS PART OF YOUR "INLINE" PRODUCTION PROCESS CAN PRODUCE *FINER FINISHES, FASTER, AT LESS COST*

The increasing acceptance and use of infrared radiant heating as a *precision production tool* has put Jensen *Coordinated* Finishing Systems with their many advantages right into the production line, supplementing or taking the place of present heating equipment.

Jensen "Dual Heat" Ovens have always incorporated the *time-saving benefits* of instant heat through radiant energy and the *extra-use value* of convected, derived heated air for greater thermal efficiency. A Jensen Finishing System can be designed to coordinate spraying, baking and drying with a Jensen conveyor of the right type and adaptability, to meet the needs and speeds of your specific finishing operations.

ABSOLUTELY WITHOUT COST OR ANY OBLIGATION TO YOU

Let us conduct laboratory tests on *your* products, using *your* finishes. Parts will be promptly returned for your inspection, together with recommendations to meet *your* production requirements. *You get* practical proof of every possible cost saving.

Jensen SPECIALTIES INCORPORATED

• Representatives in Principal Cities

9331 FREELAND AVENUE • DETROIT 28, MICHIGAN

MANUFACTURERS OF ECONOMY-ENGINEERED RADIANT HEAT EQUIPMENT

"DUAL HEAT" INFRARED OVENS • CONVEYORS • PAINT DIP TANKS

You've invested a tremendous amount of materials, manpower and money in your product — not to mention years of engineering.

To do that product justice, you want a finish that's **custom tailored** for maximum wear and efficiency.

For years Central Paint has been manufacturing just such finishes , as anyone in the kitchen cabinet, fluorescent lighting stripping, kitchenware, oil burner jacket, and wire cloth industries will tell you. By concentrating on the specialized problems in each industry, Central Paint has become a recognized efficiency-leader in certain fields.

Well, we're ready to expand a little now and we believe we can deliver the same top quality service to **your industry.** We can develop finishes that will perform under the precise conditions your product has to contend with — weather, wear, dampness, heat or cold.

Our highly concentrated enamels will also save you money by yielding **greater mileage.** You'll find that Central Paint's Industrial Finishes are more economical in the long run because they're the best quality that money can buy.

So write to the Industrial Finishes Division of Central Paint today for help in your paint problems.
That's our business and we're good at it.

CENTRAL

PAINT AND VARNISH WORKS, INC.
INDUSTRIAL FINISHES DIVISION
59-69 PROSPECT STREET, BROOKLYN 1, N. Y.

Pan Cleaning and Glazing

Here is a type of coating and recoating job that is strictly for utility purposes—for durability, rust prevention and to allow the baked bread and rolls to easily slip out of baking pans that haven't been greased.

By James F. Nolan

IN ORDER that every reader of this article may have a better understanding of the subject, I shall explain the why and wherefore of pan glazing. In the first place, new bakers' pans must be "burned-out" before bread or rolls can be baked in them; otherwise the baked items would not brown properly.

To release bakery goods after they are baked in an oven, the pans used by many bakeries are coated with a silicone material; this is called glazing. Otherwise the pans would have to be greased each time before the dough is placed in the pan. Greasing pans is a costly operation for a bakery. A large percentage of bakeries prefer to use glazed pans, not only because of the cost factor, but because of the saving in time for greasing pans and the subsequent thorough washing required to remove the grease before the pans can be used again.

Glazed Pans Release Baked Goods Easily

New pans, glazed for the first time, will release bakery goods after 100 to 150 bakings before the pans require re-glazing. As glazed pans are used and re-glazed after stripping off the old glaze, the number of bakings increases to about 300 before re-glazing is necessary.

Two types of work are to be considered—the burn-out and glazing of new pans, and cleaning and glazing of used pans. I shall discuss the work on new pans first. Most of the pans are made of sheet steel which has a very thin coating of pure tin (about 1/10,000th of an inch thick). These tinplate pans are sufficiently durable to withstand ordinary wear and tear of daily use, provided they are properly burned-out and protected against rust. Bakers cannot use rusted pans.

Brushed with Mineral Spirits; Burn-out with Oven Heat

First the new pans are cleaned on a machine that has four vertical brushes which revolve in a tank of mineral spirits. The spirits are carried up into the ends of the brushes to remove palm oil from inside the pans. *(To page 28)*

Operator lowering a loaded rack of pans into silicone converter where the old coating is made water-soluble and then washed off. At the right are alkali cleaning and rinse tanks.

Bread pans comprise a unit of several individual pans reinforced around the outside by a metal strap about 1½-in. wide, see accompanying illustrations. Next the pans are wiped inside and outside and placed on portable castered racks on which they are placed in a gas-fired, convection, batch-type oven to burn out for three to four hours at 425° F. This burning produces the blue-gray color of the tinplate, which is so necessary for correct baking.

Temperature in this oven must be accurately controlled; for instance, if it should rise to 449.6° F. (the melting point of tin) the tin coating would melt off the sheet steel and the pans would be ruined. In the burn-out operation, uniformity of temperatures and careful attention to all details—these factors actually control the life and effectiveness of the glaze coating which follows.

Conveyorized Automatic Spray Setup Coats Both Sides

Pans are placed, one set at a time, on the horizontal belt conveyor of the glazing machine which is really a conveyorized, automatic spray booth where fixed guns spray the silicone material. Four guns are used, two at the top (which are stationary for coating the outside of the pan sets) and two reciprocating guns on the bottom for completely coating the inside surfaces of pans.

The glaze is a silicone material made from high grade silica sand chemically treated to produce the resin base. The solvents with which the resin is mixed evaporate after application, leaving a transparent coating on the surface. This material, as we use it, has about 15% solids content, with a viscosity of 18 seconds at 80° F. It is applied in the glazing machine at an atomizing pressure of 21-lbs., and a fluid pressure of 15-lbs.

We have recently installed an auxillary coating machine which is used principally for re-glazing used pans. This is a hand operated machine where the operator places a set of pans over a series of nozzles which release a jet of silicone material against the insides of the pans. These jets are set so that the entire inside surface is uniformly coated.

A hand operated silicone coating machine where jets from below apply coating material to inside surfaces of bakery pans.

Coated pans are placed in a batch type, indirect gas fired, convection oven where the glaze is cured for four hours at 425° F. Again, as in the burn-out oven, the temperature must be accurately controlled to produce a uniform heat not to exceed 425° F. *(To page 30)*

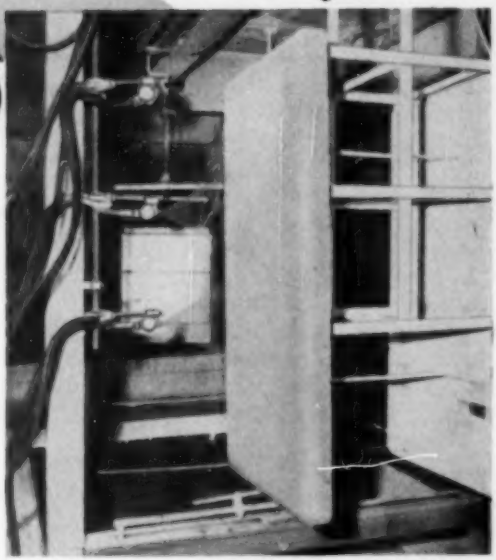
Now It's A Breeze
TO WATER WASH AN AUTOMATIC SPRAY

with a

DESPATCH

Uniform Velocity SPRAY BOOTH

Stratification and air turbulence are eliminated in this booth designed for electrostatic and other low pressure automatic spraying. Make-up air distributed evenly through filters covering entire back wall and air outlets at four levels across the front curtain provide uniform air movement over entire face of the booth. This uniform air flow and low pressure spraying through an electrostatic field reduces paint losses. Filtered air in conveyor vestibules provides effective seals against factory air and dirt. Water up to 50 gals. per minute per lineal foot applied to the split curtain minimizes paint accumulation. Splashing is eliminated by a specially designed wet splash guard. Water flowing over the booth-floor collects overspray and carries it to settling tanks for recovery. Pictured is the prime coat booth in the Seeger Refrigerator Plant, St. Paul, Minn.



Water wash spray booths for automatic or hand spraying and dry spray booths are designed for maximum efficiency and are available to any specifications. DESPATCH engineers will gladly analyze your requirements and plan, select, coordinate and install individual units or a complete finishing system.

WRITE TODAY for Bulletin 66 or request a representative to call.

Standard Despatch Water Wash Spray

DESPATCH OVEN COMPANY

Minneapolis Office: 619 S. E. 8th Street

Chicago Office: 7070 N. Clark Street

DESPATCH OVEN COMPANY

Rust-Inhibiting Enamel Applied to Pan Straps

Upon leaving the oven the glazed pans are allowed to cool, after which from 35 to 50 pans are nested upside down on casteréd trucks. Extreme care must be used in handling glazed pans, especially in nesting them, so that the inside finish will not be damaged. Pans are then moved to a spray booth where a double wet coat of special synthetic, pigmented enamel is sprayed on the outside surfaces, with special emphasis on the metal straps or bands which take the most punishment in daily handling and use, and where rust generally starts.

This synthetic material has high resistance to heat and chemicals. It is especially inert to both alkaline and acid action, and is not affected by high humidity conditions. It is sufficiently thermoplastic after polymerization, so that it readily expands and contracts under extreme temperature ranges; it is not affected by any temperatures extending upward to 500° F.

To give you an idea of the durability of this outside coating, it will withstand a 99.9% humidity test at 120° F. for 4800 hours; and a 20% of saturation salt spray test at 95° F. for 1200 hours. The durability of this coating is especially necessary due to conditions in processing and baking of bakery goods.

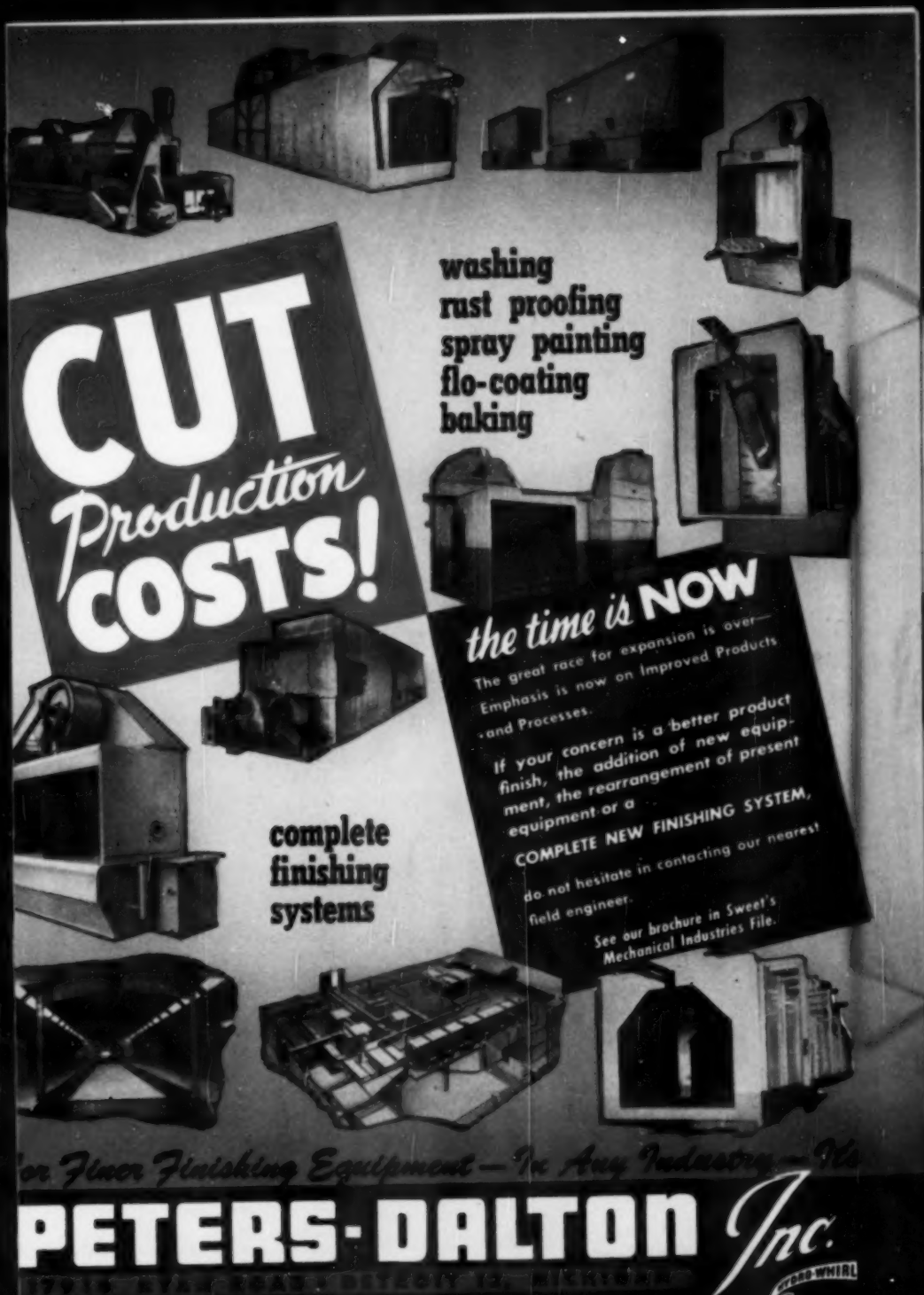
Preparatory Work on Used Bakery Pans

Used pans, sent in for re-glazing, fall into two groups—those that have never been previously glazed and in which grease was used to release the bakery goods, and those that were previously glazed with silicone coating.

Those pans in which grease has been used are generally black and the inside surface is coated with grease and particles of charred dough crusting the corners. These pans are placed in wire baskets back to back, and sent through a trichlorethylene degreaser to remove the grease. Next the loaded baskets are immersed in a tank containing a modified alkali cleaner, maintained at 212° F. for two to four hours. The strength of this solution must be carefully guarded to prevent the solution from attacking the tin coating on the pans. Next, comes a hot water rinse at 180° F.

Cleaned pans are sent to inspection benches where each set is inspected and hand brushed to remove any carbon that may be still clinging to the inside surfaces, and especially in corners. The pans move

Hand spraying the straps or bands around sets of pans. For this job the operator uses a synthetic pigmented enamel which resists wear, alkalies, acids and humidity.

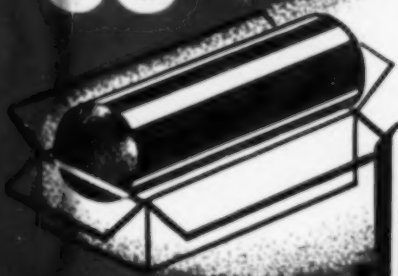

CUT
Production
COSTS!
washing
rust proofing
spray painting
flo-coating
baking
the time is NOW
The great race for expansion is over—
Emphasis is now on Improved Products
and Processes.
If your concern is a better product
finish, the addition of new equip-
ment, the rearrangement of present
equipment or a
COMPLETE NEW FINISHING SYSTEM,
do not hesitate in contacting our nearest
field engineer.
See our brochure in Sweet's
Mechanical Industries File.
complete
finishing
systems
or Finer Finishing Equipment — In Any Industry — We
PETERS-DALTON Inc.
DE-CAD-WHIRL

YOUR PRODUCT

air dries
dust free in
2 minutes

handles in
5 minutes

can be packaged in
30 minutes



with

QD SYNFLEX

that very high gloss synthetic
enamel that covers with one coat
and air dries with jet speed

ANDREW BROWN COMPANY 5431 S. District Blvd., Los Angeles 22
1223 East Pike Street, Seattle 22 • Irving (Dallas), Texas • Laurel, Maryland

through a dry-off oven for 30 minutes at 350° F. From this point these pans follow the same operations as new pans, starting with the brush cleaning with mineral spirits—excepting, of course, the burn-out operation.

Pans that have been previously glazed and have been sent in for reglazing are not grease coated and have no charred material clinging to their surfaces; therefore, the amount of preparatory work on them is materially reduced. However, the previous glaze coat must be removed before the pans can be coated again. To remove the glaze coat, pans go through a deglazing machine wherein chemicals are used to convert the silicone coating to a water soluble substance.

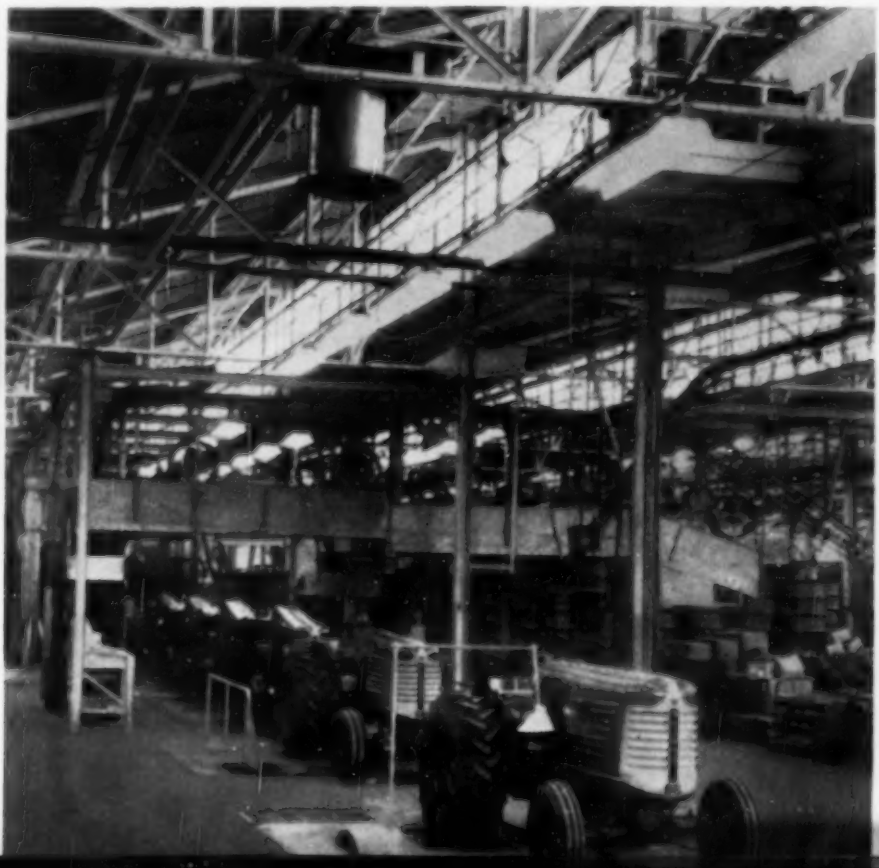
These chemicals have no effect on the tin coating or the burned-out surface of the metal. Hot water

Operator will run sets of pans through conveyorized machine where coating material is automatically sprayed from above and below to coat outsides and insides of pans.

jets, under pressure, rinse off the glaze coat. Upon leaving the deglazing machine, pans are inspected, dried in the dry-off oven and, with the exception of the burn-out operation, they follow the same operations as new pans starting with brush cleaning with mineral spirits.

To pack for shipment, 25 pans are nested together with a pad of crepe paper inserted at each diagonal corner to protect the glaze coating on the inside surfaces from rubbing together and rupturing the coating. Wood pallets are placed on top and bottom.

Below: The tractor finishing layout of the Oliver Corp., at Charles City, Iowa, is virtually three conveyorized systems. All are accurately timed and located so as to deliver their ware at specified assembly points at the proper time. Two monorail continuous conveyors handle wheels, rims and miscellaneous parts, carrying them through the various stages of the finishing process. Wash units, paint spray booths, dry-off and finish bake ovens are strategically located in the conveyor lines for fast efficient results. Designed, built and installed by a concern in Minneapolis, Minnesota, the 3-unit system is producing 15 Oliver tractors per hour—a 50% increase over previous production with older methods of materials handling.—Photograph supplied through the courtesy of Despatch Oven Co., Minneapolis.



"Oakite's new method for cleaning brass and copper before nickel and chrome plating is tops!"

From Connecticut to California, electroplaters are enthusiastic about the NEW Oakite brass-cleaning method that gives good protection against tarnish along with effective removal of oils and buffing compounds. Here are a few comments:

Wonderful cleaner for brass . . . Results have been excellent . . . Not a single reject on brass and copper work in two months . . . Good cleaning combination . . . All parts plate perfectly . . . Worth its weight in gold . . . No discernible tarnish during anodic cleaning . . . Rejects at lowest point ever . . . Nickel plate extremely adherent, very bright and lustrous . . . Getting excellent results in automatic plating machine . . . 15 to 20 seconds reverse did perfect job . . . Much brighter plating, much better adhesion . . . Could not detect any tarnish . . .

FREE Write today to Oakite Products, Inc., 32F Thames St., New York 6, N. Y., for full information.

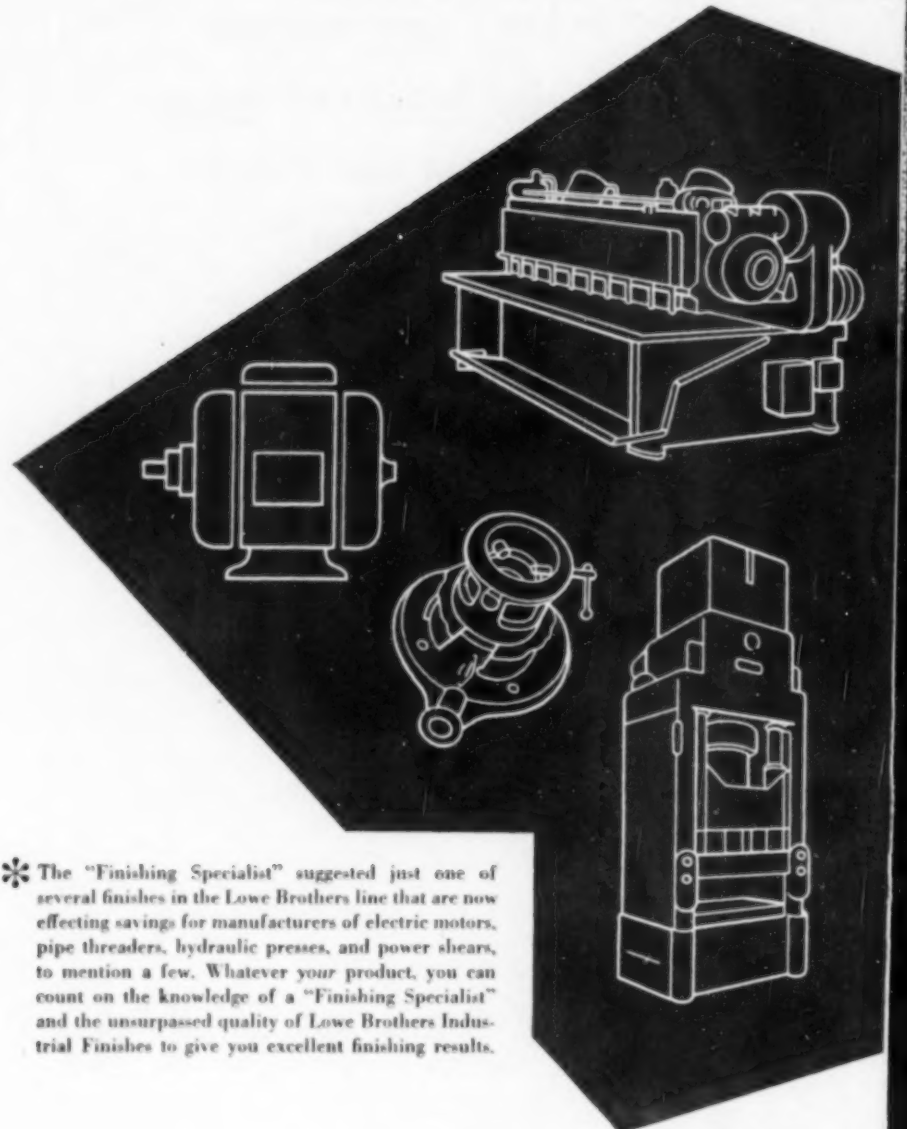
OAKITE

REG. U. S. PAT. OFF.

INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

LOWE BROTHERS

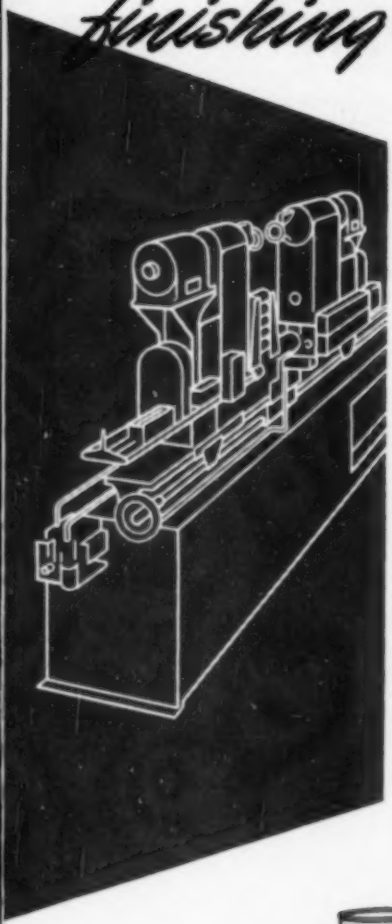


✻ The "Finishing Specialist" suggested just one of several finishes in the Lowe Brothers line that are now effecting savings for manufacturers of electric motors, pipe threaders, hydraulic presses, and power shears, to mention a few. Whatever *your* product, you can count on the knowledge of a "Finishing Specialist" and the unsurpassed quality of Lowe Brothers Industrial Finishes to give you excellent finishing results.

This advertisement is based on facts from the Lowe Brothers

"FINISHING SPECIALIST"

cuts manufacturer's finishing costs in half!



A large machinery manufacturer was applying a deluxe finish to all of his metal products—even to those which did not require the finest type of finish. Through his thorough knowledge of finishing requirements, a Lowe Brothers "Finishing Specialist" was able to recommend a less expensive finish and preparation method for equipment being sold to less exacting customers. Net result: The finished products were just as salesworthy as before—but *finishing costs were 50% lower!* What's more, further savings were effected because the need for a large part of the costly filling and sanding operations was greatly reduced!

A simple solution, yes, but a typical result of the experience and knowledge which a Lowe Brothers "Finishing Specialist" brings to any job. Why not have your finishing operations checked *now* and take advantage of the benefits of better methods and materials? There's no cost or obligation. Write today for details on this service.

THE LOWE BROTHERS COMPANY • DAYTON 2, OHIO

LEADERSHIP THROUGH CONSISTENT SERVICE

Lowe Brothers
FINISHES FOR INDUSTRY

Industrial Case History Files.

Ditto *Duplicating Machines*

FINISHED IN WRINKLE ENAMEL

By John P. Kennedy
Production Mgr., Ditto, Inc.

Cleaning and surface treating metal parts; spraying on, then baking a smooth primer coat to cover die-cast pieces; spraying a coat of fine pattern wrinkle enamel followed by flash dry and baking at a heat of 275° F.

IN ADDITION to its utility and durability, the finish on duplicating machines must have an attractive appearance and it must remain presentable over a long period of time. The finish must have perfect adhesion and a reasonable degree of flexibility. It should not attract and retain dust, and it must lend itself to easy cleaning.

Wrinkle finish meets all of these requirements; however, the wrinkle pattern must be extremely fine. Formulation of the wrinkle enamel must be such that under the same

Spraying wrinkle enamel on duplicating machine parts. Several different colors are used.

"Save the Surface"

with **SURPHOS**

.....METAL PHOSPHATING CHEMICAL

Prepares Metal for Painting

TO USE SURPHOS

. . . dissolve in water to a concentration of one ounce per gallon and apply to metal by dipping or spraying. Acid proof equipment not needed.

- **CLEANS**
- **FORMS PHOSPHATE COATING**
- **PREVENTS RUSTING**
- **IMPROVES ADHESION of PAINT**
- **INCREASES HUMIDITY and SALT-SPRAY RESISTANCE of PAINT**

INDUSTRIAL CHEMICAL PRODUCTS COMPANY

3778 BELLEVUE AVENUE **DETROIT 7, MICH.**

Representatives in Principal Mid-Western Cities

In Canada made and sold by Boyle Chemicals Ltd., Windsor, Ont.

constant methods of application, baking time and heat, the wrinkle pattern will be constantly uniform. This is necessary because all parts of the machines are not finished at the same time, or even consecutively. When they are essembled there must be no variation in the wrinkle pattern of the various parts.

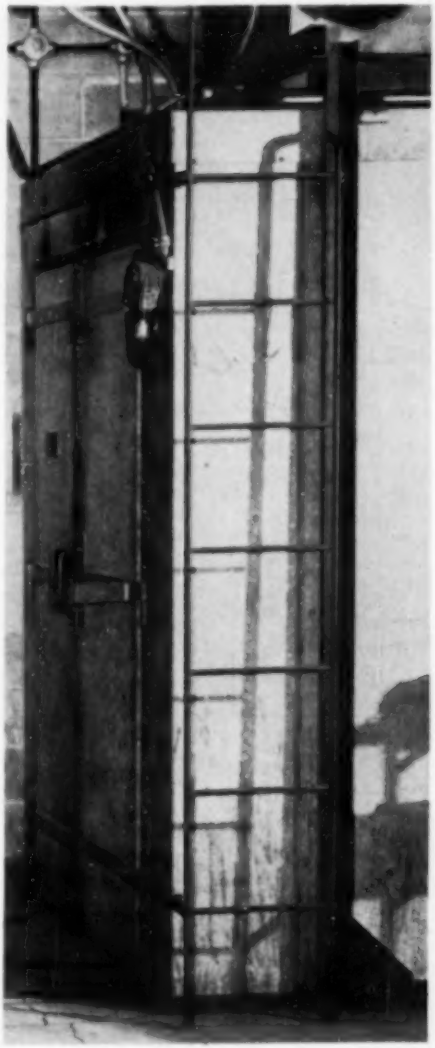
Cleaning, Masking and Priming Die-Cast Parts

Cleaning of the metal surface is highly important. All parts, both steel and zinc die cast, go through metal cleaning operations which include a hot alkali cleaner, rinse, rust proofing, and a chromic acid rinse to etch the steel surface. All parts are dried in a dry-off oven. Next all holes for screws and bolts are masked or plugged with cone-shaped stoppers to prevent any clogging of the holes by spray coats of primer and wrinkle enamel which are to follow.

At this point die cast pieces are separated from the steel parts; the die-cast pieces go to the prime-coat booth where a synthetic primer is applied. After a 5-minute flash (air dry) period, these parts are moved into an indirect gas-fired convection oven where the primer is baked for one hour at 300° F. After the baked primer coat cools, the surface is lightly scuff sanded.

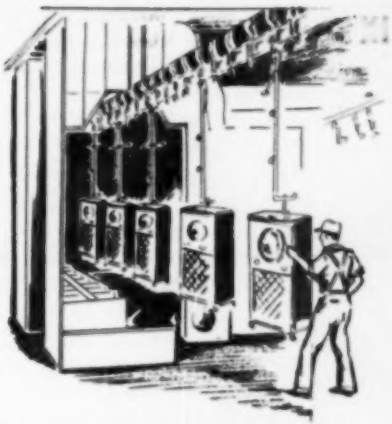
Some models of these machines require a gloss stripe on the base of the machine. To produce this stripe the prime coated castings are masked with ¼-in. masking tape where the stripe is located. The masking tape used is a special heat-resisting tape, for it remains on the casting during the spraying of wrinkle enamel and baking. When it is finally removed after baking, the synthetic primer forms the ¼-in. stripe around the machine body.

Next all die cast and steel parts are given a spray coat of wrinkle



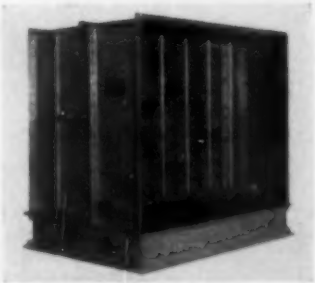
Batch type oven, thermostatically controlled for baking wrinkle finish on metal parts.

Down Go Finishing Rejects When You Control DUST!

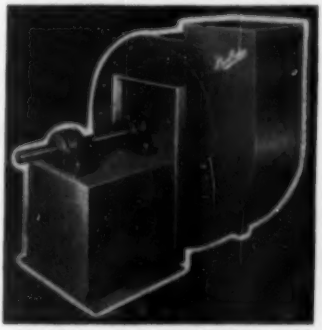


The Easy, Thorough Way Is with "Buffalo" Units

You can devote a good many man-hours to keeping airborne dust off freshly coated work. But doesn't it make more sense to let a "Buffalo" Air Washer or Exhauster do the "housekeeping" for you—continuously, thoroughly and without bother? Initial cost of "Buffalo" Units is offset many times through long years of service. *Many "Buffalo" Air Washers are still removing dust efficiently after more than forty years on the job!* WRITE NOW for all facts on this easier, more thorough—and cheaper—way to cut rejects caused by dust.



"BUFFALO" AIR WASHERS keep your air clean continuously with very little attention. WRITE FOR BULLETIN 3142-D.



"BUFFALO" INDUSTRIAL EXHAUSTERS draw off dust, fumes, grit at very low cost. Also minimize fire hazard in paint spray booth. WRITE FOR BULLETIN 3576.

First For Fans

BUFFALO "Buffalo" FORGE COMPANY

532 BROADWAY BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Branch Offices in All Principal Cities

VENTILATING AIR WASHING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

FLORESCENT FIXTURES
GIVE
BRIGHTER LIGHT
WITH

POLY - NAM
SYNTHETIC ENAMEL

- Assures depth and sharpness of gloss.
- A white that stays white; gives full hiding in one spray coat.
- Colors remain clean and natural looking.
- Excellent adhesion to most metal surfaces and bakelite.
- Sets dust-free in less than 10 minutes.
- Bakes to full hardness in 15 minutes at 300° F.

SEND FOR SEA-LAC SAMPLES

Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

enamel. This coat is allowed to flash (air dry) for about ten minutes before the parts are placed in a batch-type indirect gas-fired convection oven. A heat of 275° F. is maintained in this oven. Parts are baked from ¾ to 1¼ hours, depending upon the color of the wrinkle enamel and the gauge of the metal parts. Lighter shades of enamel and light gauge metal are baked for 45 minutes. The baking time is increased to the maximum for black wrinkle enamel and for the heavier metal parts.

After the metal cools, plugs are removed from the screw holes and bolt holes; masking tape is removed from the castings; and all parts are inspected. Name and trade mark decals are applied to body castings, and all parts go to the finished parts stock room. From here they are requisitioned in sets to go to the assembly lines.

DuBois Co., Cincinnati, Acquires Giant Products, Los Angeles

The DuBois Company, Cincinnati, Ohio, manufacturer of specialized cleaning and processing compounds, has purchased the Giant Products Company of Los Angeles.

In announcing the acquisition, T. V. DuBois, president, pointed out that it adds to the DuBois organization the facilities of a branch manufacturing plant, laboratories, and offices on the west coast.

The 15-year-old Giant Company, whose products generally parallel those of The DuBois Company, has operated chiefly west of the Rockies, with the bulk of its sales force in Southern California. Its modern plant occupies a full city block adjacent to downtown Los Angeles. A feature of the plant is its well-planned loading and shipping facilities, which include a 6-car rail siding and permit truck loading on all three other sides.

With headquarters in Cincinnati, The DuBois Company operates nationally, through an extensive network of field representatives and warehouses in all principal cities. This coming year marks its 30th anniversary. Its dual line of chemical products is well known in both institutional and industrial fields.

Metal Cleaning Solved By Specialists

ONE OF THE basic reasons why cleaning of metals presents a problem to which there is no standardized solution, lies in the fact that the surface soil acquired or accumulated during preceding stages of fabrication are so widely varied in nature. In fact, this foreign matter is almost endless in its variety.

To list all of these materials and their influence on cleaning would require more space than can be allotted to the subject in a short article. Some idea of the practically limitless combinations of dirt frequently encountered may be gleaned from the following quick review of the major classifications of foreign matter.

Oils, fats and grease comprise one big category. These are of animal origin (lard, tallow, or sperm oil); of vegetable origin (castor oil, palm oil, cottonseed oil, etc.), and of mineral origin (a group which includes many petroleum oils and compounded greases). Making up this latter class are deposits left on work by those materials most widely utilized in present-day metal fabrication; for example, machining, stamping and drawing lubricants, slushing oils and compounds, the binding agents and lubricants of polishing and buffing compounds.

Another classification of surface soil comprises dirt or solid matter, which is represented by the smut that forms on steel during rolling and drilling operations, as well as the pigments employed for difficult drawing

(Continued on page 113)

Better Paint Adhesion— Fewer Operations!

KLEM-KOTE → RINSE → PAINT

That's what you get with Klem-Kote, the revolutionary new phosphate coating. Here's what automotive and appliance manufacturers say, after actual tests in their plants:

"Klem-Kote, used in a three-stage spray washer system, gives paint adhesion and salt spray resistance equal to, and in most cases superior to, other phosphate treatments in complex five and six-stage rust-proofing systems."

Klem-Kote cleans, conditions, rust-proofs, in one operation . . . eliminates extra stages . . . saves time, material, heat, labor. Here's a typical spray washer process, using Klem-Kote in *ordinary steel equipment:*

1. Klem-Kote at 1½ oz. per gal. water, temperature 170° to 180° F.; time, 1 minute. **2.** Rinse. **3.** (Optional) Hot Rinse.

Simple . . . but effective . . . with non-toxic, non-fuming Klem-Kote leaving a fine, iridescent, crystalline, tightly-adherent, *complex* phosphate coating—a perfect paint bond! Eliminate complicated, costly, six-stage or inadequate three-stage systems you may now be using. Let Klem-Kote help you save, reduce rejects and improve the finish of your products.

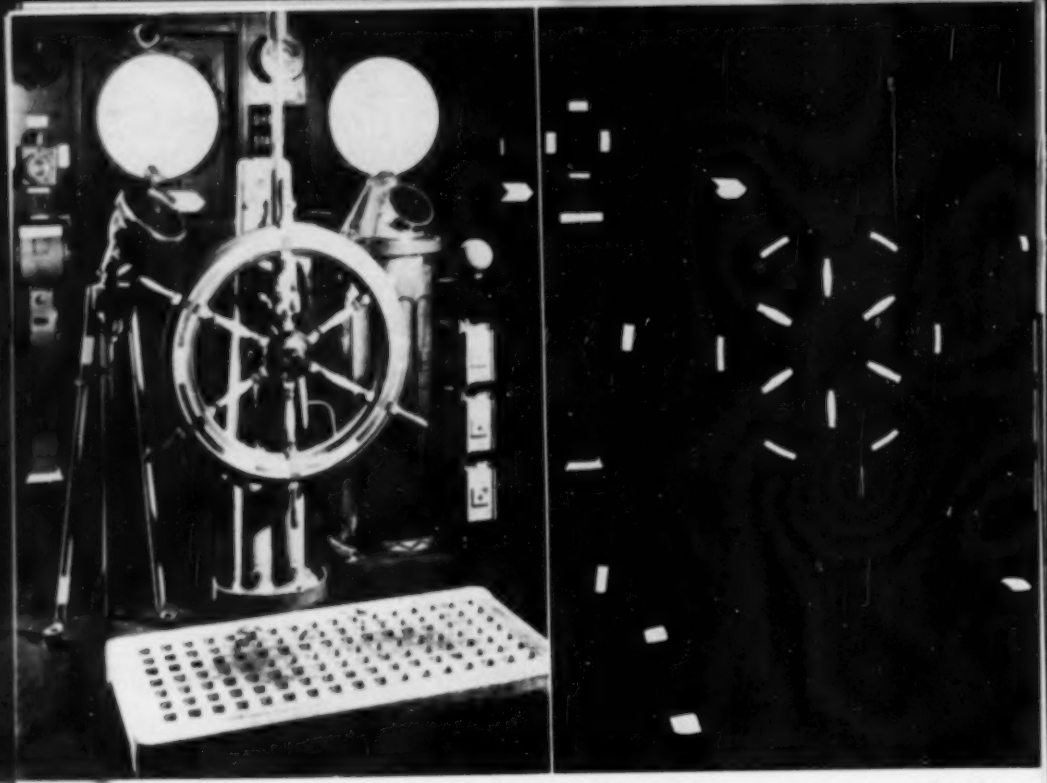
There is a Klem Field Service Engineer in your area. Write now for complete information on how Klem-Kote can solve your particular finishing problem quickly . . . and economically.

Klem-Kote is equally effective on steel, iron or aluminum surfaces, suitable for immersion or spray process. Shipped in 100 lb. or 400 lb. drums.

KLEM Chemicals Inc.

OFFICES IN PRINCIPAL CITIES

14373 LANSON • DEARBORN, MICHIGAN



Wheelhouse of a ship in light and in darkness. Photo, courtesy The New Jersey Zinc Co.

LUMINESCENT PAINTS

...THEIR USE AND POSSIBILITIES

By P. C. BARDIN
Associate Editor

Second installment of a 2-part article that reveals practical data on luminous paints, their uses and possibilities, and how to prepare and apply them.

LUMINESCENT properties may be obtained in lacquer enamel, transluscent lacquer, water colors, dyes and silk-screen pastes. One manufacturer lists 15 different colors. Of this number only two show a wide divergence between the daylight and fluorescent colors. These are: 1) red which is yellow in daylight, but which fluoresces a strong red color; 2) light blue which in daylight is a pale cream, but which fluoresces to a pale blue.

Another manufacturer shows an array of colors among which six of each (fluorescent and phosphorescent) have been selected and shown in Table I and Table II, with pertinent information about each one.

As listed in Table II the base materials that go into phosphorescent pigments include zinc sulfide, combinations of zinc and cadmium sulfides, and calcium and strontium sulfides. These pigment particles range in size from five to forty times larger than fluorescent pigment particles, yet the individual particles can not be seen except through a microscope. Surfaces painted with phosphorescent paints therefore, feel and appear rougher than those coated with fluorescent paints.

Surface Preparation for Luminous Paints

The surface of any material, whether metal, wood, glass, plastic, must be smooth, clean and free of any oil or grease before luminescent paint is applied. First, the surface should receive a prime coat

Table I. Fluorescent Pigments

Daylight Color	Fluorescent Color	Relative Fl. Brightness 100—Standard	Specific Gravity	Base Material
White*	Blue White	100	4.1	Zinc Sulfide
Lavender†	Deep Blue	40	4.1	Zinc Sulfide
Pale Yellow* Green†	Green	95	4.1	Zinc Sulfide
Cream*	Yellow	85	4.25	Zinc Sulfide Cadmium Sulfide
Buff†	Orange	30	4.35	Zinc Sulfide Cadmium Sulfide
Orange† Brown	Red	2	4.45	Zinc Sulfide Cadmium Sulfide

One firm's colors and the data relating to same. *Shows some lag after exciting light is removed. †May be tinted so daylight and fluorescent colors approximately match.

or sealer coat, followed by a coat of white paint that has highly reflective powers, as a base. A paint composed of zinc white (zinc oxide) and titanium oxide is recommended for this purpose. With these preliminary coatings on the surface, and dry, the luminescent paint can be applied.

After the luminescent coating has become dry it should be protected by a coat of clear lacquer, especially if its pigments are composed of calcium and strontium sulfides. The lacquer used for this protective coat must be of a type that will not filter out the exciting ultra-violet rays, and one that will not become discolored by exposure to these rays. If the luminescent coating is of the new daylight fluorescent type, formulated from organic chemicals, no protective coating of clear lacquer is required.

Technique of Applying Luminescent Paints

Luminescent paints may be sprayed, dipped, tumbled, dip-whirled, brushed or applied by silk-screen process. As in the case of other paints, it is better to apply several thin coats than one heavy coat. How many coats may be necessary to produce a satisfactory job for the purpose intended, will depend upon the formulation and the quantity of luminescent material per gallon of paint, but generally two coats should be sufficient.

Fluorescent pigments may be used in ink to be printed on various surfaces, such as paper or thin plastic sheets. Phosphorescent paints however, with possibly few exceptions, are not usually applied by this method because of the coarseness of the pigment grains. The usual methods of using phos-

Table II. Phosphorescent Pigments

Daylight Color	Fluorescent Color	Phosphorescent Color	Relative Fl. Brightness 100—Standard	Specific Gravity	Approx. Length of Afterglow*	Base Material
Light Green	Green	Green	94	4.1	1 to 2 hrs.	Zinc Sulfide
Pale Yellow	Orange Yellow	Orange Yellow	65	4.25	30 minutes	Zinc Sulfide Cadmium Sulfide
Yellow White	Green	Green	94	4.1	1 to 2 hrs.	Zinc Sulfide
Oyster White	Gray Blue	Blue	11	3.12	10 to 12 hrs.	Calcium Sulfide Strontium Sulfide
Greenish White	Blue	Sky Blue	14	3.1	10 to 12 hrs.	Calcium Sulfide Strontium Sulfide
Pale Green	Blue	Greenish Blue	19	3.45	10 to 12 hrs.	Calcium Sulfide Strontium Sulfide

*Time will vary with conditions of excitation, testing methods, and other conditions. Times shown are based on five-minute exposure at one foot from a 100-watt Mazda lamp.

OUR SINCEREST THANKS TO THE MIDWESTERN FIRMS WHO HAVE SO WARMLY WELCOMED OUR NEW LAFAYETTE, INDIANA PLANT.

WE SHALL ENDEAVOR TO SHOW OUR APPRECIATION BY CONTINUING TO OFFER THE VERY FINEST INDUSTRIAL FINISHES OBTAINABLE ANYWHERE.

The Egyptian Lacquer Manfacturing Company

South Kearny, N. J.

EGYPTIAN
INDUSTRIAL FINISHES

Lafayette, Ind.

SYNTHETICS • ENAMELS • LACQUERS • VARNISHES

phorescent paint for mechanical reproduction of lettering, designs and pictures, are the silk-screen process and the dusting process, similar to a bronzing operation. Of course, pastes suitable for screen processing must be used. A printing concern has developed a method of printing sheets up to 22x34-in. with phosphorescent material. Regular letterpress equipment is employed. Halftones cannot be used but reproductions of type and fine line drawings can be printed.

Possible Uses for Luminescent Pigments

The uses for luminescent pigments will increase as more people become acquainted with these materials and with what may be accomplished through their application. Luminescent materials may be incorporated or blended in with certain plastics for injection, compression or extrusion molding. The resulting products or parts of products have the power to fluoresce or phosphoresce, depending upon the type of pigment used. Certain luminescent pigments may be used in glaze coats on ceramic products (to be baked at normal firing temperatures) without damage to the pigments.

For Decorative Effects; Identification; Safety

Uses for luminescent paints include safety aids, toys, games and juvenile books, novelties, displays, advertising signs and posters; decorations of all kinds such as murals, theatrical equipment, etc.; also for radios, automobiles, aircraft, and in many places in industrial plants. Space will not permit the listing of all of the products and uses for luminescent paints; however, a few examples may provide ideas that will lead to a wider use.

Safety aid uses include coating of push plates for doors, exit signs, doors, doorknobs, directional arrows pointing to exits, stair risers and rails, fuse boxes, fire hose cabinets and fire extinguisher panels. In the event of an emergency or power failure, a phosphorescent painted sign or area may be the means of saving human life and property.

The list of toys, games, novelties, and nursery pictures that lend themselves to luminescent coating are almost without limit. Advertising signs and displays (both outdoor and inside) offer opportunities for the use of these paints to attract attention with their brilliance by day, and at night in the absence of visible light, to enhance the merchandise featured.

Instrument Dials Can Be Made Visible in Darkness

Murals done in fluorescent paints provide a brilliance of color that cannot be matched with any other paint. When activated by "black light" these murals give the impression that the light is in back of the picture, and that it shines out through the various colors somewhat like the sun shining through a stained glass window. Radio dials are more luminous when they are screen printed with these paints.

Several automobile manufacturers are now using fluorescent paints on the instrument panels of cars. A switch turns on "black light" and only the dials are visible. The

SOLVE YOUR
FLOOR SPACE
PROBLEMS with

VELVA-TŌN

FASTUFF

DRIES 40% FASTER!

Air-Dry SYNTHETIC ENAMEL

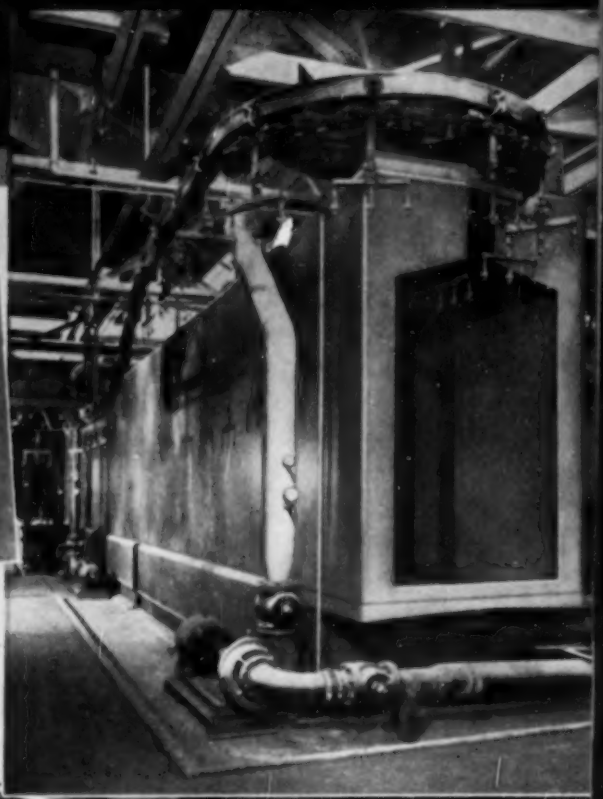
PAINTS · SYNTHETICS
UNITED
LACQUERS · ENAMELS

Yes, the synthetic with the speed of lacquer cuts drying time: handle in 15 minutes, pack in 2 hours! Increase production and get a smoother, tougher, more flexible finish too.

Write United's research department for the formula that meets your particular need. We will custom-compound it and send a generous working sample free.

UNITED
LACQUER MFG. CORP.
LINDEN, N. J. EVERETT, MASS.

COMPLET



At Extreme Right: General view showing enclosed, pressurized Hydro-Filter Spray Booth and Dip Enameling Equipment. At Right: Metal Cleaning and Rust Proofing Equipment. Above: Interior of Dry-Off Oven—parts of a complete Mahon Finishing System designed to meet the finishing requirements of a progressive stove manufacturer.

Mahon Finish Baking Ovens—the Oven in the foreground is for baking Japan finished parts, while the Oven in the rear is for baking Synthetic Enamaloid parts. These are part of the same three-in-one Finishing System.

M

E

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

Finer, More Durable STOVE FINISHES at LOWER COST!

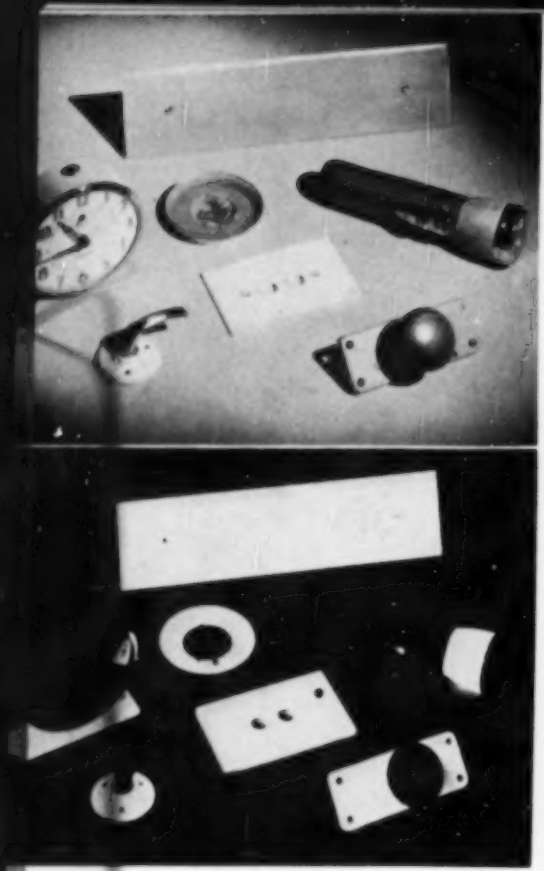
Stove manufacturers, like other appliance manufacturers, are keenly aware of the important role product finish plays at point of sale in a highly competitive market . . . they are also alert to the prime necessity of ultramodern finishing equipment to lower finishing production costs to an irreducible minimum. That is why you will find more Mahon Finishing Systems in plants of household appliance manufacturers than all other types combined . . . this is also true for automobiles, farm implements, and many other industries where finishing is a major production operation. The illustrations here show parts of a three-in-one Mahon Finishing System installed for a large midwestern stove manufacturer . . . this system is so designed as to permit spray enameling, dip enameling, and japanning . . . it is typical of Mahon planning and engineering in meeting individual finishing requirements. If you are contemplating new finishing equipment, remember that Mahon has pioneered development in this highly specialized field for thirty years . . . broad experience, plus constant research and experimentation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mech. Ind. File, or write for Catalog No. A-649.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens. Also, Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

AHON



Articles in daylight (above) and in darkness. Photo, courtesy New Jersey Zinc Co.

same applies to aircraft. During the war all bombers were equipped with instrument panels, charts and other apurtenances printed or coated with fluorescent materials. Then it was a must for safety and success. Now it is used for the safety and convenience of pilot, crew and passengers.

Industrial plants may find a wide use for luminous paints not only for safety measures, but for inspection work and general convenience as well. Among the many uses is the coating of valves and valve wheels, especially in sprinkler system lines, and in the boiler room for water and pressure gauge background panels, etc. The electric control board with its many switches, buttons and dials offers a prolific field for these paints.

An important use for fluorescent pigments in industry is in the detection of defects such as flaws, cracks, open seams, etc., in metal products — cast, sheet or tubing. The metal is coated with fluorescent paint before it goes through the metal washer and dry-off oven for surface cleaning, preparation and drying. Then it is inspected under black light. The fluorescent material is washed off the surface but remains in any pits, cracks or open seams to reveal flaws which otherwise would be invisible.

Detection of Glue Spots on Furniture in the White

Fluorescent pigments play an important part in the detection of glue spots on wood furniture and cabinets before finish coats are applied. In assembling wood furniture and cabinet work, glue is sometimes dropped or smeared on the surface or squeezed out around the joints. Unless this excess glue is completely removed, both from the surface and the pores of the wood, the spots will show up amplified in the finished piece.

In the past it has been difficult to locate those spots where some of the glue remains in the pores of the wood. With the aid of fluorescent pigments in the glue, the inspector using a near ultra-violet ray lamp can easily and quickly detect such spots by excitation of the fluorescent pigments which cause the spot

(Continued on page 54)

Highlights on

HILO

Product Finishes

VITRA CARLITE

Quick-Bake Synthetic Enamel
Hard and Durable

For a desirable porcelain-like smoothness, on metal and wood, use VITRA CARLITE! You also get mar-proofness, resistance to wear and to outdoor elements. VITRA CARLITE—a high-bake, lead-free synthetic—is available in white, black and colors.

Send for Trial Lot and Descriptive Bulletin No. 21 on this popular finish.

HILO

HILO VARNISH CORPORATION

42-60 Stewart Avenue, Brooklyn 6, N. Y.

2420 Washburne Ave., Chicago 8, Ill. • Park Sq. Bldg. Boston 16, Mass.

to glow. Wood surfaces that have come in contact with the glue, but which have been properly and thoroughly cleaned will not glow.

If electrostatic spraying or detearing equipment is used, a luminous painted thin line frame of the grid system and the controls will indicate their location at all times. Then, of course, there are stairways, exits, projections and fire-fighting equipment which may be necessary to locate quickly and definitely when it is dark and when time is short.

Luminescent paints have definite possibilities. They will serve well under proper conditions, provided they are carefully selected for the particular job and are applied and protected correctly. These paints are not to be selected or handled like ordinary paints. Close cooperation is recommended between the formulator and the user to obtain best results.

Losaw Represents Monroe Sander Corp. in New Jersey

Arthur "Bud" Losaw, Jr., has been appointed the New Jersey representative of The Monroe Sander Corp. of Long Island City, N.Y., manufacturer of industrial finishes, synthetics and paints.

Mr. Losaw, who resides in Basking Ridge, N.J., and attended school in Newark, has been identified with the paint industry for more than 20 years.

Egyptian Expansion Program Continues

The Egyptian Lacquer Mfg. Co. is continuing its intensive manufacturing, sales and service reorganization program. This program will provide users of Egyptian finishes with faster processing of orders and an accelerated treatment of customer finishing problems.

Egyptian's most important step in this project was the erection of its new, additional plant in Lafayette, Ind., last year. This plant gives more immediate service to firms in the central states.

An extensive rehabilitation program at Egyptian's South Kearny, N.J. plant maintains its position as one of the finest producers of quality finishes in the country.

Many personnel changes and promotions have occurred as part of the program. Some of these have already been announced in this magazine. Important recent changes include the promotion of the veteran Egyptian salesman, Philip H. Beach, to General Sales Manager. Mr. Beach has been with Egyptian since 1931 serving first as a sales representative in Massachusetts and Rhode Island; then as an assistant sales manager. His last position before his promotion was that of regional sales manager for New England. Mr. Beach's headquarters will be in the South Kearny offices.

Mr. John B. deBrun has been transferred from Egyptian's New York offices to assist Mr. Beach. His official title will be Assistant Sales Manager.

Another appointment is that of Jack Malool to become Regional Sales Manager for the Metropolitan New York area. Mr. Malool is a familiar figure to many in the finishing industry.

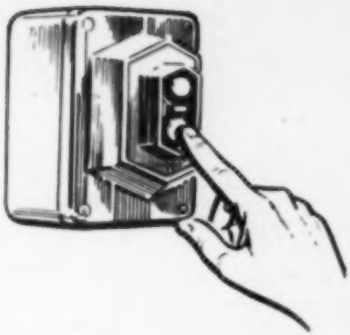
Egyptian's sales structure is now divided into three major regions under Mr. Beach's direction. The first is the eastern region (including New England) under Mr. John deBrun; the second is the greater New York region under Mr. Jack Malool; the third is the midwestern region under Mr. Frederick Keller. This division has its headquarters in Lafayette, Ind.

Right at top:
Philip H. Beach

Below at left:
John B. deBrun

Below at right:
Jack Malool

Push-Button Painting...



NOW

BECAUSE OF THESE THREE ELECTRO-SPRAY ADVANTAGES

- No other method of spray painting, automatic or manual, *saves 40 to 60 per cent on gallons* of coating material used.
- No other automatic spray method is so versatile with so little set-up time, *paints a variety of sizes and shapes* through the same booth, on the same line.
- No other spray method *will save up to 95 per cent* on booth clean-up time, and other indirect costs.

With *added* advantages and *savings* like these, possible only with Electrostatic Spray Painting, chances are you *can* convert to automatic *now*. Write today for literature describing typical installations in *your field*.

RANSBURG

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

Finishing Plastic Panels For Automobile Interiors

By J. D. BRAUGHT, Plant Manager
General American Transportation*

THIS article might be called a lesson in dust prevention. Dust is the foe of all finishing operations. Applying finish coats onto panels and products made of clear polystyrene lends greater importance to the dust problem because, due to the static electricity in this plastic material, dust is attracted to it as bits of steel are attracted to a strong magnet. The only hope of attaining a smooth, satisfactory finish is to reduce dust and flying particles in the air to the vanishing point.

In order to keep out dust our entire finishing room is pressurized. Filtered air—47,300-cu. ft. of it per minute—is injected into the room. Exhaust fans remove a total of 28,800-cu. ft. per minute. When doors are opened some clean filtered air flows out instead of dust-laden air rushing in. The same direction of draft applies to any crack or opening in the walls, ceiling or floor; the flow of air is out instead of in. Besides being pressurized, the finishing room is air conditioned throughout the year to maintain a uniform temperature of 78° F. with a relative humidity of 50%.

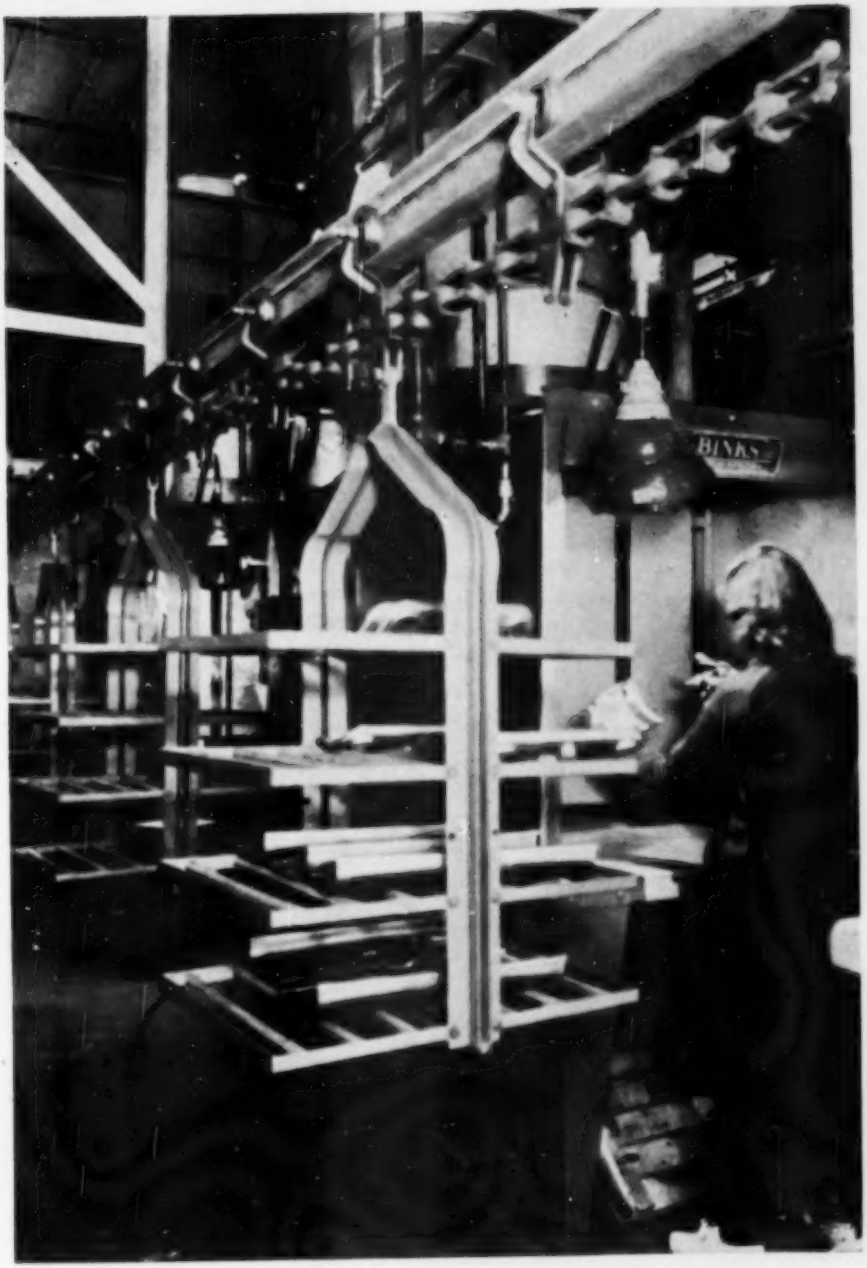
All of our concrete floors are treated with a sealer and a waterproofing material, which makes cleaning easy and tends to prevent the stirring up of any dust when anyone walks somewhere in the finishing room. All wiping rags are dust free and lint free. Only white cloths are used. There is a sufficient quantity of wiping rags so that clean ones are always available, and they are laundered regularly.

Applying Color Coat On Back on Panels

Plastic panels, packed in cartons, are delivered to the finishing department from the molding room. The first operation is to wipe the backs, which have a corrugated surface, with industrial alcohol. Panels are racked on trays to be sprayed. A coat of metal-gray polystyrene enamel is sprayed over the entire back surface of each piece. This

*East Chicago, Indiana.

In a dustproof pressurized spray room, plastic panels for interiors of automobiles are coated with gray enamel on the backs, and clear plastic coating on the face sides to insulate them from all static electricity and to give a lustrous, durable, mar-resistant finish.



Row of waist-high spray booths in which grey enamel is sprayed on backs of panels.

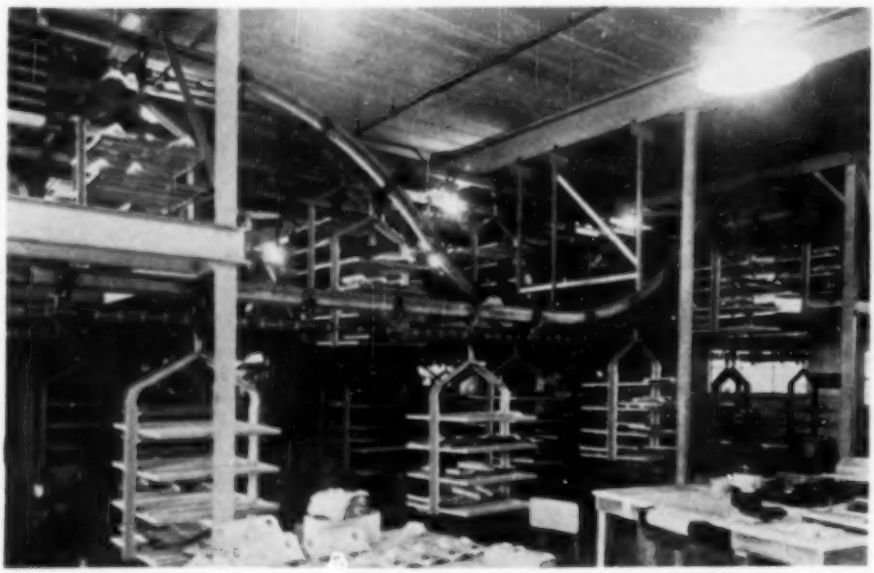
enamel is applied at a viscosity of 51.2-seconds at 78° F., (No. 2 Zahn cup) using an atomizing pressure of 60-lb. and a fluid pressure of 7-lb. per square inch. Then the panels are placed on steel carrier racks suspended from a slow-moving overhead conveyor; the enamel coat air dries for 45-minutes as the panels travel around the finishing room by conveyor.

A Dust Free Surface is Really Necessary

Painting the backs of these panels with gray enamel does not relieve nor eliminate the static attraction of the face sides of the panels.

Panels, painted on their backs only, are removed from the overhead conveyor, and their face sides are carefully and thoroughly wiped with lint-free cloths saturated with industrial alcohol. Then they are transferred to a moving belt conveyor which delivers them to two spray booths for face coating. *The clear coating material used is compatible with polystyrene and it serves a dual purpose. It not only insulates the panel against static electricity but it also produces an attractively finished mar-resistant surface which is so necessary for the enduring beauty of the panels, once they are installed on the dashboard of a modern automobile.*

Before the panels are sprayed, each operator uses an air gun to blow clean air over the faces of the panels as an added precaution. It can be readily understood that if a piece of lint or a particle of dust were allowed to remain on the surface to be coated with the clear



Where panels travel in pressurized, air-conditioned room to air dry metal-gray enamel coat.

"Haw! Too slippery for you, eh?"

To get a finish on a product and make it stick can be quite a problem at times. On mirror-bright chromium plate, for example.

A manufacturer was faced with that problem on chromium plated refrigerator shelves. And he asked Unichrome engineers to see what they could do.

Neglecting not one single requirement of shelf service, they formulated a Unichrome finish that gave him clarity, resistance to humidity, food chemicals, abrasion—as well as remarkable adhesion to chromium. Today, it is one of the most popular and widely-used finishes for chromium shelves!

Would you like to try out our thinking on *your* problem? Write us about it.

Remember—a "fresh viewpoint" often works wonders!

UNICHROME

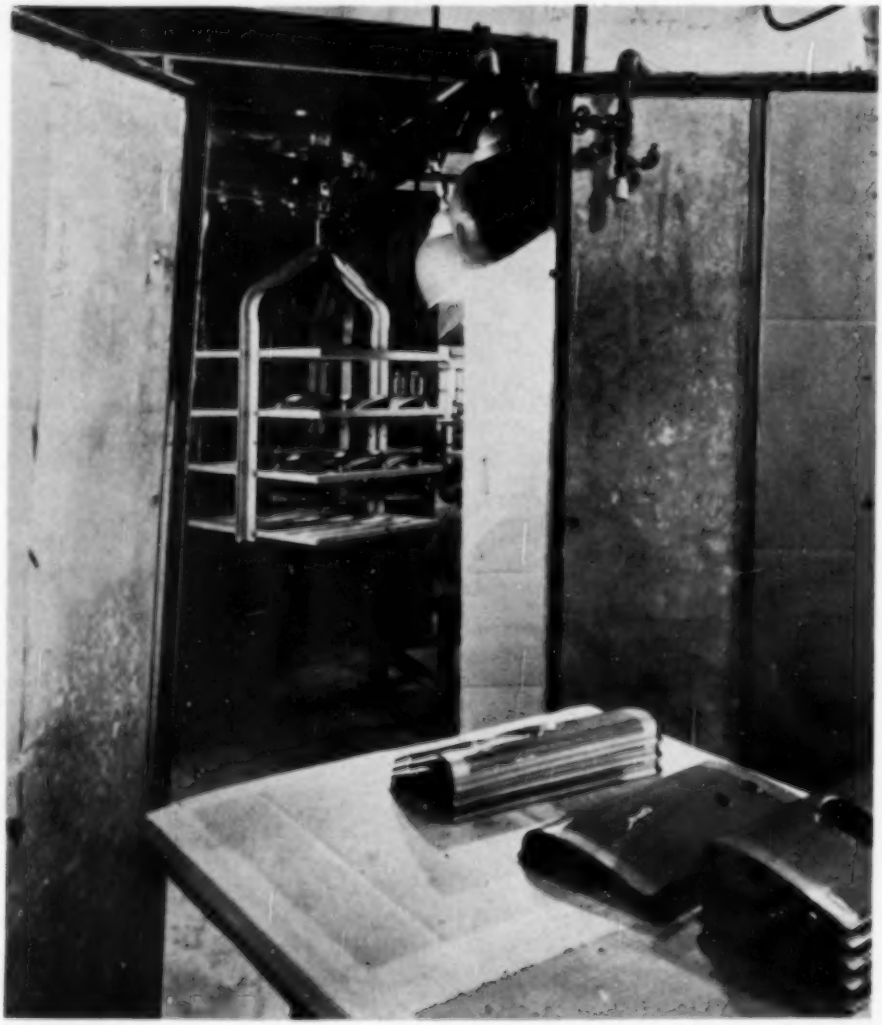
LACQUERS, SYNTHETICS, BAKING ENAMELS

Products of the Organic Coatings Division of UNITED CHROMIUM, Incorporated
51 East 42nd Street, New York 17, N.Y.
Detroit • Waterbury • Chicago • Los Angeles

coating material, it would result not only in a rough place on the surface, but it would be magnified by the coating and would be visible.

The clear plastic coating material is applied to the face sides of these panels at a viscosity of 42.7 seconds at 78° F. (No. 2 Zahn cup) using an atomizing pressure of 50-lb., and a fluid pressure of 7-lb. per sq. in.

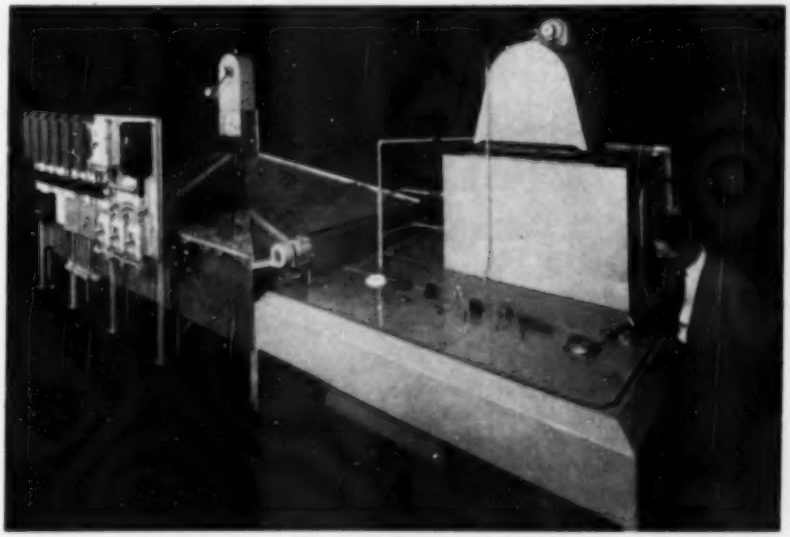
The finishing unit, which includes two spray booths and the conveyor-



Two spray booths and entrance to oven, where clear plastic coating material is sprayed on faces of plastic panels and cured. The coated panels rest on racks hanging from conveyor.

LOWER YOUR SPRAY-BAKE COSTS

by finishing small pieces (compacts, clocks, pens, etc.) in large quantities, in any shape, on this Capitol High Speed Electric Spray-Bake Conveyor Equipment. Prominent manufacturers of clocks, automotive parts, hardware, compacts, pens, pencils, lipsticks, etc., are among the many satisfied users of Capitol Machines, Models B, C and D, one of which is pictured below.



Shown on working bed of machine are: clock casing, pencils, toy train, motor housing, dial ring, and door knobs—a few of many items which can be spray-bake finished.

Here's How: Speedy production—Over 200 pieces per minute. Small space required—as little as 6′ x 18′. Quick change adjustments—only 10 minutes! Machine cost recovered in few months by actual case histories. Absolutely uniform quality controls.

Ask Now For: Details on these and other exclusive features. Or better still, bring in or send in your own work samples for test run and estimate. No obligation.

WRITE

The CAPITOL MACHINE COMPANY

DANBURY, CONNECTICUT

Tel. 4580

ized curing oven used for this clear insulating coat, was especially engineered for this particular material. The success of this application depends to a great extent upon the short time interval that elapses between final coating and the start of oven-curing.

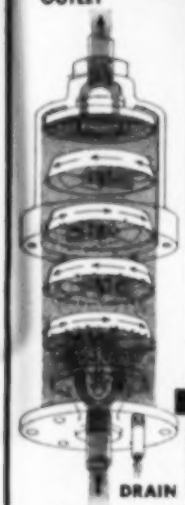
After being spray coated the panels are placed on one of the fast moving racks to be carried through a gas-fired, convection oven where the clear plastic coating is cured for 6-minutes at 138° F. The overhead curing conveyor operates through a variable-speed drive at speeds 4 to 18-ft. per minute; hangers are on 40-in. centers.

At the unloading station panels are lined up on the wrapping tables where they cool rapidly at room temperature before they are wrapped for shipment.

Let The ARIDIFIER

CLEAN YOUR AIR AND GAS LINES

Removes 92% Oil, Water and Dirt



The Aridifier gives you positive removal of oil, moisture and other foreign matter from air or gas lines. With paints and lacquers it often eliminates bloom and imperfections in finish. It provides dry lines for ceramics, sand blasting, for air cleaning, etc. Wherever the need exists for *dry clean* air or gas, the Aridifier delivers the goods. Easily installed. No maintenance problem. 10 models available. Capacity range: As low as 7 CFM to 17,000 CFM.

BULLETIN 147 Tells The Complete Story

HOW IT WORKS — Exploded view shows how four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

Made By The Manufacturers of Logan Lathes and Shapers.

Logan ENGINEERING CO.

4915 W. LAWRENCE AVE., CHICAGO 30, ILL.

Crown Oil and A. J. Wittenberg Corp. Merged

A. J. Wittenberg, president, announces the merger of the Crown Oil Products Corp. and the A. J. Wittenberg Corp. to form Crown - Wittenberg Chemical Corp.

The new company will occupy the offices, laboratories and manufacturing facilities of the Crown Oil Products Corp., located at 2-14 49th Ave., Long Island City, N.Y.

The Crown-Wittenberg Chemical Corp. will continue the production of alkyds, treated drying oils and hard resins, and in addition, will market natural resins and rosin products.

Mr. Wittenberg, who will head the new company, has a wide acquaintance among paint, varnish, linoleum, printing ink and textile manufacturers, which industries form the principal outlets for his products.

Mr. Wittenberg is president of Synthetic Resins, Inc., of Valdosta, Ga., director and vice president of American Gum Importers Laboratories, and a member of the American Chemical Society; New York Produce Club; Union League Club, and Downtown Athletic Club.

CODUR KY-821

...for finishing metal products

The new member of the M & W family is growing by leaps and bounds.

More and more manufacturers—volume users—are getting to know and rely on the new M & W CODUR Gloss White Baking Enamel KY-821 to meet their requirements in most baking schedules.

From every gallon they are getting excellent "mileage" on Metal Furniture, Kitchen Cabinets, Fluorescent Fixture Reflectors, Electrical Appliances, etc.

What's more you can count on high reflectivity and good hiding qualities in CODUR KY-821. You will find the surface is relatively unaffected by usual household chemicals and cleaners. Applied by either spray or dip method, this finish is sufficiently flexible to withstand shock from sharp blows, and is hard enough to resist severe abrasive action.

Low Prices on this Top Quality enamel result from volume sales. Ask your M & W Sales Engineer about this New Baby or write the division nearest you.

PIONEERS IN PROTECTION
M&WCo. 1876

. . . where industry goes with finishing problems

MAAS & WALDSTEIN COMPANY NEWARK 4, NEW JERSEY

Boston 13, Mass. • Chicago 12, Ill. • Los Angeles 54, Calif.
Pacific Coast Division: SMITH-DAVIS CO., 10751 Venice Boulevard, Los Angeles 34
MANUFACTURERS OF INDUSTRIAL FINISHES

Up to your neck in high pr

FOREMEN, SUPERVISORS, EXECUTIVE
problem involving costs, performanc
"bug". . . write E. I. du Pont de Nem
Division, Wilmington 98, Delaware.

DEPEND ON DU PONT FOR BET

oduction costs?

Exaggerated situation? Well, maybe! But today's rising costs have many production teams feeling this way.

Next time you study your cost structure with an eye toward economy, take another look at your finishing materials and methods. For finishing costs . . . *which include far more than simply price per gallon of finish* . . . have a direct bearing on your total end cost.

A breakdown of your finishing process may reveal new ways of effecting *real* savings. Often the choice of the right finish, correctly applied, makes *dollars and cents differences* . . . in drying time, storage space, labor costs, percentage of rejects, and packaging operations.

To help you examine your finishing process . . . to aid you in discovering *new* overall production and handling economies, call on Du Pont. Today, thousands of pre-tested formulas under the trade names "Duco" and "Dulux" are helping to keep manufacturers' end costs at a minimum.

If you have a finishing
. . or a tough technical
rs & Co. (Inc.), Finishes

R FINISHES

DU PONT

REG U.S PAT OFF

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Finishing OAK PRODUCTS

By Rollin H. Wampler

Author of "Modern Organic Finishes"

Suggesting a variety of good finishes for oak products, from the low-priced articles to fine furniture, paneling and fixtures, in both varnish and lacquer.

OAK IS ONE of the best-liked and most useful woods. It has many desirable qualities. Oak is hard, tough and so strong that it is often favored wherever wood is needed or specified for structural use.

Fortunately, oak is so abundant that it can be widely used for those strictly utilitarian applications where its special qualities indicate it to be particularly useful.

If oak were a rare wood, difficult to obtain, it still would be prized for the beauty of its grain and figure. The "flash figure" in quartered oak is unique among all woods. The less dramatic patterns of plain-sawed oak still provide enough variety and contrast to make it pleasingly restful for furniture, wall paneling and floors.

Because oak is so abundant and so well suited for such prosaic purposes as screen doors, babies' play pens, juvenile furniture (which really takes a beating), porch and lawn furniture, and flooring, its use in fine cabinet work is often overlooked.

Most of these more utilitarian products must be finished in some manner, and as inexpensively as possible, in keeping with the nature and price of the product; and here is a problem.

Inexpensive Clear Finish; Two Coats of Varnish

About the most inexpensive clear finish that is reasonably satisfactory for outside exposure, is two coats of spar varnish, applied by dipping or spraying. If some color is required, the wood may first be

Our 75th Anniversary

1875—1950

WHEN Bruce C. McFadden founded this company 75 years ago he was the recognized authority on wood finishes. He pioneered the development of stains and fillers for the furniture industry. Since then, it has been our constant objective to maintain the same progressive spirit in pioneering development work.

In recent years, this effort has been directed to problems of conveyorized production finishing. Our success in this endeavor has been gratifying and our business volume has recorded an all time high.

To our personnel, friends, customers and suppliers, we wish to take this occasion to express our sincere appreciation for their help and cooperation which has sustained us through the years. Without their support any success we have achieved would have been difficult if not impossible.

The second and third generations are now active in the company and we hereby reaffirm our life-long policy of supplying our customers with the finest materials on the market, properly formulated to meet their most exacting requirements.

A Happy and Prosperous New Year to All!

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD **PHILADELPHIA 36, PA.**

dipped into a non-grain-raising stain, or in a pigment wiping stain and then wiped before varnishing. The pigment wiping stain usually gives a more uniform color than the non-grain-raising stain, and in addition helps to fill large pores in the wood. The stain is followed by two coats of spar varnish. For interior use, the system may be the same, except that the clear coating may be lacquer, either dipped or sprayed.

But for a really full, smooth finish on oak, I know of no way to avoid the use of paste wood filler. A pigment stain will help to fill the pores, but it still will not fill them well enough for a fine job. Wiping stains are much easier to wipe off and clean than filler, and they will do a fair compromise job. Like most compromises, however, they will not do as a substitute for fine work.

Sealer; Filler; Sealer; Sand the Surface; Varnish

An excellent system for oak that is to be exposed to the weather, is similar to what is used on the ash parts of automobile station wagons. First, a penetrating sealer is applied, preferably a sealer of the rot-inhibiting type—if there is any danger of rotting. This is followed by an exterior-type paste wood filler, handled exactly like the filler used on cabinet work. After a suitable drying time, another coat of penetrating sealer is applied.

When dry, this sealer-coated surface is scuff-sanded and followed by two coats of high grade spar or exterior varnish. This type of finishing system also gives good resistance to mechanical wear, such as on floors and work tables of various types. For interior use the system may consist of tough lacquer-base materials, giving equally as good mechanical wear, and possessing the great advantage of faster drying.

Lacquer-Sealer-Stain Plus Clear Lacquer

For interior use, the color needed (if any) can be incorporated in the first coat if it is lacquer, although pigment stains give good results in such applications also. For example, one manufacturer of oak play pens finishes his products entirely with lacquer. The first coat is a dipping type of lacquer sealer to which a suitable quantity of non-grain-raising stain has been added.

Manufacturers of wood finishes will make these materials ready to apply, so that no color need be added by the user. These products are called toners or colored sealers. This system, used on play pens, calls for sanding the sealer and dipping or spraying one or two coats of either gloss or flat lacquer. Of course, for a better job, the wood can be filled, and the colored sealer or toner follows; the final coat or coats can be clear lacquer.

For fine cabinet work, a more complex system which produces better results is usually required. The complex mission oak and fumed oak systems of many years ago are much simpler now; the results of the fuming process may be duplicated for any but the most critical, by modern stains. Such modern systems may require non-grain-raising stains, wash coats, fillers, sealers, pigment wiping glazes (for

NEW FACILITIES ASSURE UNIFORMITY

Equipment fabricated by Martin-C[illegible] Co.

This installation (pictured above) is the last word in modernity and efficiency. You are assured prompt deliveries — uniformity — and an improved product.

Our stains are processsed and stored in stainless steel to insure purity — filtered to guarantee cleanliness — automatically meter pumped for uniformity — scientifically controlled for color and strength.

In keeping with our policy of providing the furniture trade with the finest lacquers — sealers and stains — this new equipment expedites handling — speeds filling of orders — safeguards our products throughout processing — storage — and delivery to you.

IMMEDIATE FILLING OF ORDERS

SPEEDY DELIVERY OF ALL GILBERT SPRUANCE WOOD STAINS

THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

blending and highlighting) and lacquers or some of the newer so-called "synthetics."

Limed Oak; Wash Coat; White Filler; Clear Lacquer

The currently popular limed-oak finishes are easy to produce. To avoid the troublesome process of bleaching, the lumber must be selected for light, uniform color, free from knots and mineral streaks. First, a wash coat is applied; it may be either clear or it may contain a very little white lacquer enamel to give a slightly lighter and more uniform tone.

After sanding this wash coat, a white filler is applied and cleaned up carefully. The final coats are conventional sealers and lacquers or other clear materials. Darker oak finishes, such as Swedish oak, are built up in a similar manner, but darker fillers and stains are used.

Other Striking Combinations of Contrasting Color

In recent years some attractive oak finishes have been produced that are particularly suited for kitchen furniture, although they are also used on dining room and bedroom suites. A thin coat of lacquer enamel is sprayed on the wood, just enough to completely hide the color of the wood, but not enough to fill any of the pores. Then the wood is filled with a filler of contrasting color. This type of system does not require a critical selection of lumber for uniform color. Combinations that have been used effectively are tan toner and white filler, black toner and white filler, ivory toner and black, or even green or red filler, etc.

Ash and elm wood can be treated in a manner similar to oak, since their grain patterns are quite similar. They are both excellent for the opaque toner-contrasting filler type of system, although both have also been used under transparent systems. Some of the newer walnut finishes employ the semi-transparent toner-contrasting filler technique also, as one can readily see by visiting furniture shows.

The basic techniques for finishing oak, which I have described in this short article are susceptible to many variations, and many will appear as time goes on. The skilled finisher who has a vivid imagination may suggest or work out systems that have real value to his company, sales-wise. Perhaps the variables in oak finishes have not been exploited as fully as those of walnut and mahogany. It is possible that in this field there is a real opportunity for the alert finisher to develop new color systems of startling beauty.

Corrosion and Chemical Resistant Coatings for Tanks

The corrosion and deterioration of metal storage tanks and drums by chemicals and the consequent contamination of the chemicals has long been a critical problem in the process industries. A method of applying corrosion-resistant linings of polyethylene (polymerized ethylene plastic) has been developed and is now available for immediate application. Polyethylene powder is sprayed through a flame spray pistol manufactured by Schori.

Schori Process Division of Ferro-Co. Corp., 8-11 Fortythird Road, Long Island City 1, N.Y., has just issued a technical bulletin, No. 103D describing in full detail the method of applying polyethylene to metal surfaces. Information in this bulletin is the result of extensive research work done by Schori and the Du Pont Company. Properly applied, the polyethylene coating is fully resistant to attack of almost all chemicals at temperatures as high as 180° F.

All's Well That's Finished Well!

A sure way to obtain a fine wood finish is through the use of the new CTA (*Controlled Temperature Application*) Zaponite* Lacquers.

With a single coat of CTA Zaponite Wood Lacquer over a coat of Zaponite Sealer, you get a finish equal to that of the normal three-coat system. This adds up to savings of as much as 25% in material and labor costs.

Learn more about this money-saving wood finish—send for the free booklet: "CTA Zaponite Wood Lacquers for *Controlled Temperature Application*."

*Reg. U. S. Pat. Off.

Service from every angle... *that's* ZAPON

REG. U. S. PAT. OFF.

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

Planning, Decorating and Finishing Fine CUSTOM MADE FURNITURE

By Frederick E. Kotzian

*V. P. of Schmieg & Kotzian, Inc.**

TO PRODUCE FINE custom-made furniture requires the most careful planning, the ultimate in all materials, and precision workmanship by skilled operators. Absolutely nothing is left to chance. Much of this type of furniture is made to special dimensions to fit into a definite space. All of it is specially designed. Let us consider, for example, the lacquered secretary illustrated in the picture on the opposite page.

Prepare Working Drawings and Decorative Designs

After determining the size of the secretary, which in this case is 1-ft. 8-in. by 3-ft. 6-in. by 7-ft. 3-in., a drawing is made to 1½-in scale (1½-in. equal one foot). This drawing shows the general outline and style of the piece. Only an overall decorative design is shown on this drawing which is used as a preliminary sketch to be discussed, criticized and changed.

Next a full-size working drawing is made, again showing only the overall decorative design. After further discussion, perhaps some changes are made and final approval is obtained. Separate detail drawings are then made of doors, desk lid, drawer fronts and side panels. These drawings show the actual decorative designs, many of which are taken from old Oriental prints. Gold and Silver leaf, as well as enamel colors, are authentically followed in finishing the piece. From these drawings the artist develops perforated stencils so that the design can be centered on the desk lid, door panels, drawer fronts, etc.

We Use Power Tools and Skilled Hand Work

Our finishing room is a place set apart from the rest of the shop. Most of our finishers and artists have been with the company many years. Here no mass production methods are employed; they are not even considered. Modern facilities such as spray equipment, portable sanders, and new rubbing machines, etc., are available for any operations where the character and quality of the work will not be sacrificed. In producing this type of furniture there is a great deal of skilled hand work.

Even though the secretary, which is made of well seasoned cherry, is sanded in the cabinet shop, it is

*This company's products are not displayed or sold in retail stores, but are sold through decorators. Most of the furniture is custom made to order, often to special dimensions. The firm is listed as "Designers and Cabinet Makers," and is located at 521 East 71st St., in New York City.—Editor.

A specially-designed custom-built secretary with decorations in Oriental motif.

Smoothing and preparing wood surfaces for protective and decorative coatings; planning and laying out all decorations, building up bas-relief (raised) designs; using color, gold leaf and metallic powders, plus the final expert finishing touches.

again hand sanded after it arrives in the finishing room. It is then given a spray coat of clear low-solids lacquer. When dry, the entire surface is again thoroughly sanded, using No. 280 wet-or-dry sandpaper. The dust from sanding is blown off and the surfaces are carefully wiped and tack ragged. Three coats of Chinese red lacquer are sprayed on.

A period of about eight hours of drying time is allowed after each coat before the lacquered surface is rubbed with steelwool. This gives us a good build and excellent adhesion. The secretary is then ready for the artist to do hand decorating.

Making Surfaces Ready for Decorative Art Work

Several essential factors were considered in reference to locating the art room in the rear of our building and on the floor above the finishing room. To do good work an artist must have adequate natural north light, plenty of working space, ample storage space, a clean dust-free room, and quiet.

When the secretary arrives in the art room, the doors, desk lid, drawer fronts, etc., are laid out on a work bench and the proper perforated stencils are centered in correct position so that the outline of the design may be pounced on. White stencil powder is used for this transfer of design outline.

Building Up Bas-Relief or "Raised" Designs

Colors for the decoration may be predetermined, especially if the design is taken from an old Oriental print, but the height to which bas-relief work is raised lies strictly with the artistic knowledge and preference of the artist.

All bas-relief must not be raised to the same level, or it would take on a grotesque appearance. For instance a tree trunk must be raised to a higher level than the branches of the tree. Likewise the stems of vines and flowers must not be raised as much as the tree branches. Regardless of how well it is done, too much bas-relief on a panel, lid or drawer front destroys the artistry of the design, and gives to the whole area a heavy, cheap and shoddy appearance. It should be used sparingly in the right places and with expert finesse.

The bas-relief parts of the decoration are really started first by applying the various colors in black, green, brown and white lacquer paste. This heavy material is put on with hand brushes and is allowed to dry from eight to twelve hours. Then succeeding coats are applied until the correct level is reached. Some parts of the decoration require as many as 10 to 15 coats.

The more coats of paste that are applied the greater the care must be taken to feather the edges of

By actual test

SCHAEFER'S CRYSTAL CLEAR WATER WHITE LACQUER DID NOT DISCOLOR WHEN EXPOSED TO LIGHT
ORDINARY WATER WHITE LACQUERS DISCOLOR UPON EXPOSURE TO LIGHT

For Color Retention

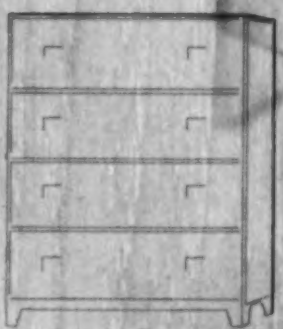
On Light Finishes . . . . It Is

CRYSTAL CLEAR
WATER WHITE
LACQUER

• It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, ermine and all pale, bleached and decorative effects so popular on furniture of today.

THE
SCHAEFER VARNISH
COMPANY
Incorporated

15th and Magnolia
LOUISVILLE 10, KENTUCKY



each succeeding coat in order to hold the shape of the piece so that it will retain a natural appearance, and not look as though the design were planted on the surface. White paste is always used on those parts of the design that are to receive gold or silver leaf. The other colors are used for tree trunks, branches, stems, vines and leaves.

Painting Scenes and Border; Make-Ready for Gold Leaf

While bas-relief work is being built up, the artist paints the various colors in scenes and border designs. Raised molding on the doors is prepared for gold leaf. Also the buildings in both doors and the temple structure in the rear of the right hand door must be prepared for gold leaf.

Preparation for gold leaf consists of applying a mixture of glue size and alcohol to the wood; this is applied hot. Care must be observed to prevent it from cooling or foaming, as this would leave a rough surface when dry. This sizing coat is wiped off the top edge of the raised molding, as the gold leaf on this rounded edge will be burnished.

Next an oil gold size, to which a small amount of Japan dryer has been added (¼-teaspoonful of drier to two teaspoonsful of oil) is brushed on all surfaces to receive gold leaf, except the top edge of the raised molding on the doors. This top edge surface is carefully wiped with a cloth saturated in benzine to insure an oil-free surface.

The oiled surfaces air dry over night to get the right amount of tackiness. Then various colors of gold leaf are applied to the flat surfaces and to the raised molding, except the top rounded edge. Of course, it adheres only to the areas containing the oil size. After smoothing and cleaning (skewing) it is allowed to dry over night.

Next the top rounded edge of the raised molding is given a coat of gilding liquor which is a mixture of eight parts water to three parts alcohol. Gold leaf is applied to the wet surface as quickly as possible and gently stroked out with a dry brush. This last coating under the gold leaf will dry in about four hours; then the gold leaf is burnished with an agate tool.

Decorating on Gold Leaf; Blowing Powder on Tacky . . .

Some of the designs are drawn on the gold leaf. For instance, the diamond panel in the right hand door is made with black India ink, using a ruling pen directly on the gold leaf. In other parts of the leafed design other colors of ink are applied by small brushes to produce the desired effect. Fine gold lines are put on with striping brushes, using gold powder mixed with clear thin lacquer.

Snow capped mountains in the left hand door are produced by carefully oil sizing the surface; then silver powder is blown on the tacky surface. Other areas in the design, where required, are given an oil size, and gold powder is blown on the tacky surface. Both care and experience are required in applying the size and in blowing the gold and silver powder onto the tacky surface, so that the powder blends out into the background.

The entire piece is allowed to dry from 12 to 16 hours; then a

(Continued on page 79)

THERE MUST BE A

Repeated tests in our laboratories and our customers' finishing rooms indicate that Reliance Fillers possess to an outstanding degree the working properties demanded of the best filler.

Reliance Fillers reduce easily and quickly with regular naphtha and have exceptional non-settling properties. They provide flush, complete filling of the pores, without sticky wiping. They harden quickly to an impervious film that holds out the top coats with maximum fullness.

Bubbling, swelling and shrinking troubles in many finishing rooms have been eliminated by switching to Reliance Fillers.

Since best results depend upon using a product built for your particular needs, we welcome an opportunity to survey your conditions and requirements.

For additional information address
4732 Crittenden Dr., Louisville, Ky.

Rely on Reliance

RELIANCE VARNISH CO., INC.
AFFILIATED FACTORIES INC.
LOUISVILLE, KY. CHICAGO, ILL. DOBBY HILL, SOUTH ASHEVILLE, N. C.

4

TYPES OF SYNTHETIC FLAT FINISHES TO CONFORM TO YOUR NEEDS . . . POCKETBOOK

DRYING SCHEDULE

- **FULL RANGE OF SHEENS** . . . from dead flat to gloss
- **NO DULLING OR CLOUDY FLATTENING AGENTS** added
- **A BEAUTIFUL RUBBED EFFECT** . . . will rub clean and clear
- **WILL EITHER AIR OR FORCE DRY**
- **OUR SUPERIOR PROCESS IN CHEMICALLY TREATING RESINS DEVELOPS A FINISH SO SMOOTH . . . YOU CAN FEEL THE DIFFERENCE**

1. **PERLAC SATIN FINISH** . . . out of the dust in 5 to 7 minutes . . . one coat looks and rubs like two coats of lacquer . . . liquor proof . . . water proof . . . won't haze or sweat back.
2. **PERFEX SATIN FINISH** . . . quick set . . . quick dry . . . water proof . . . liquor proof . . . full smooth body . . . won't haze or sweat back.
3. **PERFECTION SYNTHETIC FLAT FINISH** . . . water proof . . . liquor proof . . . beautiful rubbed effect.
4. **PERFECTION QUICK DRY FLAT VARNISH** . . . beautiful . . . rubbed effect . . . or rubs well . . . smooth.

PERFECTION PAINT & COLOR COMPANY

715 E. Maryland St., Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES

WATER-PROOF LIQUOR-PROOF

slow drying oil stain is padded on. This shading coat dries four hours before it is wiped to antique the piece. Care must be used to blend the stain up to the decoration and yet not obscure the design. The entire piece must assume a natural appearance; it must not look as if the decoration is a picture painted on a background.

After the last decorative work is performed, the secretary is allowed to dry for 24 hours; then it is given a coat of clear semi-gloss lacquer.

U. S. Testing Co. and Esselen Research Corp. Merged

The integration of two of the leading scientific laboratories in this country, the United States Testing Co., Inc., Hoboken, N.J. and the Esselen Research Corp., Boston, Mass., was announced recently by Allen L. Brassell, and Dr. Gustavus J. Esselen, presidents of the two organizations. The Esselen Research Corp. becomes the Esselen Research Division of the United States Testing Co., Inc., and will continue its operations in Boston under direction of Dr. Esselen, its founder.

This merger makes available to industry a unique combination of research personnel, facilities and experience, and it multiplies the scope and potentials of both organizations in basic and applied research for industry and government.

Wolverine Finishes Corp. Has New Lacquer Plant

Wolverine Finishes Corp. of Grand Rapids, Mich., has a new lacquer plant which includes a number of safety and production features.

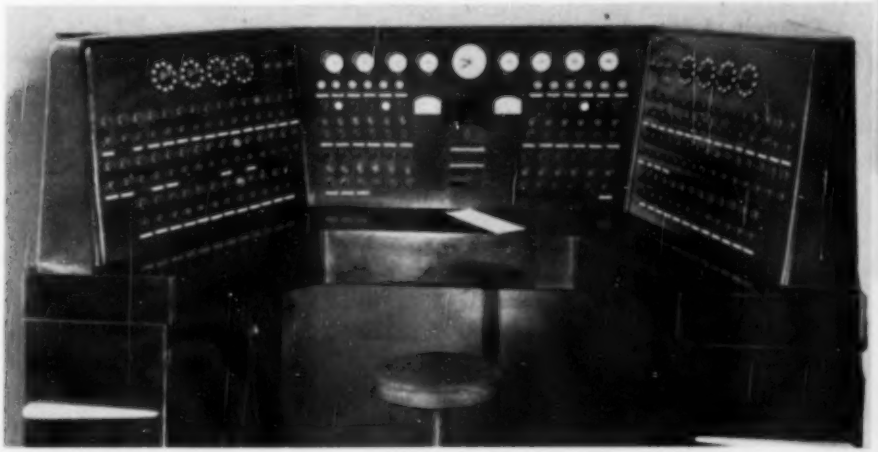
At one end of the plant the entire battery of tanks is enclosed by a concrete dike to prevent escape of solvent in case of a spill from any cause. Each tank is grounded to dissipate static or stray electrical currents.

Tank cars of solvents or diluents, received on the plant siding, are unloaded by means of a positive type pump. Facilities are also available for the receipt of solvents and diluents and other liquids by tank truck.

An operator, by setting the controls on a panelboard in the control room, can deliver to any one of the various mixing vessels, the required gallonage of solvent or diluent. This is done by means of electrically operated valves.

After the solvent and diluent required is delivered through a meter to the indicated dissolver, the valve automatically closes and the pump stops, and the line is blown clear automatically after the operator presses the button calling for that operation.

There are six individual mixing rooms and one large mixing room in the lacquer-manufacturing building; turbine-type mixers are installed in all but two of these mixing rooms. Mixers will be installed in each of the other two rooms when production requires it. Each room is cut off from the adjoining one by means of a fire wall, so that if a fire occurs in one room, it should be confined to that location. The construction of these rooms and the remainder of the building is fire resistant. *(Continued on page 81)*



Panel board of controls by which operator can send solvents to any of the mixing rooms.

For High Production Sanding

Put the improved, lightweight, powerful air driven Mity-Midget to work for you. *Cut your sanding time 75%* . . . and improve your results. Special patented features make the Mity-Midget vibrationless, yet fast orbital action at 4000 to 6000 rpm assures a saving in finishing time. National has a complete line of sanding machines . . . both air driven and electric with orbital and straight-line actions. Apply production line methods to your finishing operations with a *National Sander.* Write today for details on the complete line, or see your local jobber.

The finest portable sander yet developed

NS

NATIONAL AIR SANDER INC., Rockford, Ill.

A positive type pump, driven by an explosion-proof motor is installed below each mixer. Lacquer flows by gravity to each of the pumps; and there is a strainer in each suction line. Lacquer is delivered by these pumps to clarification equipment located in the drum filling room, where drums and other containers are filled to prescribed weights.

Included in the expansion program is a new laboratory building, in which research and control work is carried out by a staff of technical men, headed by Mr. William Oberg.

Each room that will have any inflammable materials has been explosion vented —using a ratio of about 1-sq. ft. to each 25-cu. ft. of room volume—so that in the event of a vapor-air explosion, pressure should be quickly relieved without causing serious structural damage. A non-sparking conductive floor finish has been used throughout all these rooms.

All electrical equipment throughout the new building is explosion-proof, Class I, Group D.

Radiant heating is installed. This consists of copper pipe buried in the concrete floor slab. Hot water is circulated through these coils at about 110° F. The heat is uniform, and there is a complete absence of exposed heating outlets and hot metal which could be the cause of trouble with heat sensitive materials.

The various rooms housing the mixing equipment and the other rooms of the new lacquer plant are protected by a CO^2 flooding system, which can be operated either automatically or manually. In addition to this fire protection, an adequate number of first-aid hand extinguishers are available at strategic locations about the plant, and the plant staff has been trained in the use of all of these facilities.

Production Mgr. for P.P.G. Co. Paint Division

Clarence J. Krueger has been apropinted production manager for the paint division of Pittsburgh Plate Glass Co. Associated with the firm since 1927, Mr. Krueger has served as assistant divisional director of the Ditzler Color Division during the past three years. His first position with Pittsburgh's paint division was as a research chemist at the Milwaukee, Wisc. plant.

As production manager for the paint division, Mr. Krueger will have headquarters at the firm's Pittsburgh, Penna. general offices. Plants operated by the divisions are at Houston, Cleveland, Detroit, Dayton, Milwaukee, Los Angeles, Pittsburgh and Springdale, Penna., Newark, N.J. and Portland, Oregon.

Clarence J. Krueger, Production Manager, Paint Division, of Pittsburgh Plate Glass Company

Geo. S. Forbes Becomes Mgr. of Glidden's Industrial Sales

George S. Forbes has been appointed manager of the Glidden Company's Cleveland Industrial Sales Division. Mr. Forbes succeeds Edward C. Shurtleff, who has retired after 46 years service with the firm.

George S. Forbes, Mgr. of Glidden Co.'s Cleveland, Ohio Ind. Sales Division

A graduate of Ohio University, Mr. Forbes joined the Glidden organization in 1939, serving as a technical correspondent and later as assistant sales manager of the company's Reading, Pa., Division. After more than three years service in the Navy, he was named industrial salesman in the Detroit territory. He has been serving as Mr. Shurtleff's assistant since July.

Straight Centrifugal Pumps Added to Line by Marlow

The addition of a new line of straight centrifugal pumps is announced by Marlow Pumps, Ridgewood, N.J., which expands the full Marlow line to 56 basic series of pumps, a line considered by Marlow engineers to be the largest of its kind in the world and one which can meet most industrial pumping requirements.

The new centrifugals amplify Marlow's lines of self-priming centrifugals, diaphram and plunger pumps to make a complete range of four different types, the basic models of which in turn are available in virtually endless modifications of mountings, fittings and materials.

Interested in Clean Air

In a recent issue of this magazine you published an article entitled, "Spraying Calls for Clean Air", by Henry H. Logan, in which he mentions a cleaning unit known as "Aridifier." I would appreciate it if you would let me know who manufacture this cleaner, and whether or not it is available in Canada.—S-W Co. of Canada.

The "Aridifier" is a product of Logan Engineering Co., 4915 W. Lawrence Ave., Chicago 30, Ill., see advertisement on page 29 of Dec. issue.—ED.

How to Keep Out Cold

We notice an article in November issue of INDUSTRIAL FINISHING, on page 32, entitled, "How Heated Interior Keeps Out Cold", which mentions Dravo "Counterflo". The equipment is interesting to us and we shall appreciate your giving us the address of the Dravo Corp.—N. Cabt.

It's Fifth and Liberty Ave., Pittsburgh 22, Penna.—ED.

Tumbling Process of Finishing

We have been referred to you by the National Paint, Varnish & Lacquer Association, Washington, D.C. We are interested in obtaining information on the subject of Tumbling Lacquers. Mr. E. E. Hoffman, of the above association, stated in his letter to us that various articles on this subject have been published in INDUSTRIAL FINISHING. We would greatly appreciate receiving copies of any or all of these articles, as well as a sample copy of your publication.—TECHNICAL INFORMATION CENTER.

Referring to the article published on the technique of finishing small wood turnings, etc., by tumbling, in November 1949 issue of INDUSTRIAL FINISHING, we should be most obliged if you would kindly let us have some addresses of tumbling barrel manufacturers.—Societe Belge des Couleurs et Vernis, Brussels, Belgium.

Information supplied.—ED.

Metal Cleaning and Phosphate Coating on Steel

We have noticed, on page 86 of November issue, an inquiry from the "G.E. Co.", asking assistance in depositing a phosphate coat on steel desk parts so that they can obtain better adhesion between the finish and the metal surface.

Would you be so kind as to forward the attached copy of our bulletin on "Stantite Spraying Primer" to the G.E. Co. and/or give us their full name so that we can write them direct? We are sure this material would be of definite advantage to them.

We also include an additional copy for yourselves and would appreciate your referring of this material to any other similar inquiries.—Stanley Chemical Co.

Information furnished.—ED.

Finish for Glass Offered

I noticed in December 1949 issue of INDUSTRIAL FINISHING, a Question and Answer on page 88 entitled, "Synthetic Enamel for Use on Glass". We have developed a new finish for glass and would be interested in knowing the name and address of "K.E. Co.", whose question you published. — W. E. Kreuer, Regional Industrial Sales Manager of DuPont Co. (Chicago Office).

Can Supply "Frosting" for Windows

In our line of industrial finishes, we offer a transluscent frosting lacquer which we feel will meet the requirements of "F.P.I." who inquired about this product in the "Letters from Readers", page 82 of December 1949 issue. If they are still interested, we will be glad to service them in this connection.—Fyn Paint & Lacquer Co., Brooklyn 13, N.Y.

The superintendent of Federal Prison Industries asked this question. In a letter we are submitting the full name and address.—ED.

Information Offered on Finishing Safety Razor Blades

Under the heading "Finishing Razor Blades", on page 90 of November 1949 INDUSTRIAL FINISHING Magazine, we notice a request for information about finishing razor blades.

Our English company advises us that they are at present supplying a razor blade finishing material to the Gillette

SUPERB RESISTANCE TO ALCOHOL AND ACIDS!

A MAJOR SALES ADVANTAGE OF

PYRO - CELLO - FILM

PYRO CELLO-FILM

• *The Superior Finish for All Wood Products*

Spilled drinks can't mar the beauty of your product if it's finished with PYRO CELLO-FILM. For sensational PYRO CELLO-FILM withstands even 180 proof alcohol . . . and is not injured by common household acids. PYRO CELLO-FILM assures lasting good looks because its extreme toughness and flexibility ward off bumps and scratches, repel the damaging action of water, heat, fats, greases and saline solutions.

FREE OFFER! We will finish one of your wood products with PYRO CELLO-FILM — without cost. Then you can see for yourself how wonderfully it solves your finishing problems. Write for complete information today!

PYRO CELLO-FILM is an exclusive development of

THE American VARNISH CO.
ESTABLISHED 1891
1126 N. NORTH BRANCH ST. CHICAGO 22, ILLINOIS

SUPERIORITY UNIFORMITY PYRO-CELLO-FILM

MANUFACTURERS OF VARNISHES — PAINTS — STAINS — LACQUERS — SYNTHETIC ENAMELS — CELLO FILM — SOLDERING FLUX AND SPECIAL COATINGS.

Razor Blade Co. in London, England. Formulas and application information are available to us and we would appreciate your putting us in touch with "C.C.C." who made the inquiry.—Titanine, Inc., Union, N.J.

Information supplied.—ED.

Silk Screen Process Paints

We notice in Dec. issue, page 82, an inquiry in "Letters from Readers," under the above title, and signed "E.M.P. Co." We are sending you some literature on silk screening problems and colors—also a color card—which we ask that you please forward to the firm in question. If you will send us their name, we will be glad to contact them direct.—Fred'k. A. Stresen-Reuter, Inc.

In a letter we are giving you the concern's name; also, we are forwarding them the enclosures you sent us.—ED.

Japanese Sea Grass Wanted

With reference to the article in "Letters from Readers," regarding Japanese Sea Grass, as published on page 86 in September 1949 issue, can you advise where this may be obtained in the United States? —D.N., Ltd.

We suggest that you contact Industrial Finishing Products, Attn: Mr. A. J. Galgano, 747 Belmont Ave., Brooklyn 8, N.Y. This company wrote us recently and advised that they could supply this material. —ED.

Paint for Cadmium Plate; Finishing Razor Blades

We have a flat paint which we would like to try on a sample plate, as mentioned by V., Inc. (Detroit, Mich.), in "Letters from Readers", November, page 90, "Paint for Cadmium Plate". We have been successful in applying it to many other surfaces, and if they will forward a sample piece, we might be able to solve their problem.

Another inquiry on the same page, "Finishing Razor Blades" by "C.C.C." also interests us, since we have a coating for this very purpose.—Winchester Chemical and Paint Corp.

Baked Finish on Aluminum

The Question and Answer entitled, "Baked Enamel Blisters Over Aluminum Castings", on page 92 of November issue is interesting. I believe the problem may be solved by heating the work to around 200° F.; then spray the work while hot, and follow by baking.—Handley Brown Heater Co.

Cleaning, Sweeping System

We are interested in a cleaning and sweeping system for our finishing room. We would appreciate your advising us of any supplier of the above mentioned equipment. We imagine that a portable type cleaner and sweeper would best take care of our needs. However, we would welcome any suggestion you might offer. —H. Desk Co.

In a letter we are naming some manufacturers of industrial portable vacuum cleaners. Another type of cleaner (dust collector) can be obtained from Kirk & Blum Mfg. Co., 2831 Spring Grove Ave., Cincinnati 25, Ohio.—ED.

Paint Can Stretcher

Some time ago there was advertised on the market a "Paint Can Stretcher". It fitted into the top of a gallon friction-top can, to permit stirring of the paint without spilling. Could you tell us the name of the concern who is making these? —C.G.H.

Perhaps you saw th's written up and illustrated in the "What's New" section of INDUSTRIAL FINISHING (Sept. 1949, page 100). This is a product of Roberts Paint Corp., 515 Bryant Ave., New York 59, N.Y.—ED.

Roller Coating Machine

Will you be kind enough to advise us the names of companies that sell roller coating machines in the East?—L. S. Corp.

In a letter we are naming a few concerns that we have listed as being manufacturers or suppliers of roller coating machines.—ED.

What Kind of Pen and Ink for Marking Those Radio Dials

In November, 1949 issue of INDUSTRIAL FINISHING there is an article entitled, "Maroon Crackle Finish on Motorola Radios" which has an illustration, on page 25, showing a girl using a special fountain pen and ink to fill in lines and characters of finished radio dials.

We are interested in knowing the manufacturer of this special fountain pen and ink, and any other information you might be able to supply us.—LINK AVIATION, INC.

In reference to the "special pen" that we use in finishing Motorola front plates, the word "special" probably should not have been used. We buy the cheapest type of fountain pen possible; however, we have found that the Frederick Post drawing ink works the best of any, but it is necessary to add approximately ten drops of tergitol wetting agent to one ounce of the drawing ink. This particular

Specializing in

HIGH QUALITY

Furniture and Metal

FINISHES...

Since its inception, Wolverine has specialized only in high quality finishes for wood and metal. Leading manufacturers now testify to the uniform, high quality of its materials, and to the dependable and prompt service which Wolverine renders at all times. Inquiries are invited.

Wolverine Finishes

CORPORATION

836-50
Chicago Dr., S.W.
Grand Rapids 9,
Michigan

Manufacturers
of Fine
Industrial
Finishes

material is made by the Carbon & Carbide Chemical Corp. (30 E. 42nd St., New York 17, N.Y., and in 20 other cities).

The statement in the magazine should have read: "special mixture of drawing ink", rather than a "special pen."—W. E. SMITH (Author of the article).

Knife-Coating Technique Wanted

We notice in your October issue that you are able to supply the names and addresses of two engineers who are specialists in knife coating techniques and equipment. We would like to have this information.—P. Fabrics Corp.

Information supplied.—ED.

Where's Sampson C. & P. Co.?

Would you kindly forward to us the address of the Sampson Chemical & Pigment Co.? An article on luminescent paints, in the December, 1949 issue of INDUSTRIAL FINISHING included (beginning on pages 40 and 41) their name.—A.P.D., Purchasing Agent, N-W Mfg. Corp.

It's 420 S. Kolmar Ave., Chicago, Ill. —ED.

Who Will Do Custom Graining?

Will you kindly mail us the names and addresses of finishing concerns who may be interested in wood-graining table tops from our printing plates? The graining will be applied to glued-up wood tops. If we should connect with such a concern, we will ship the table tops and our printing plates to them.—S. P. PRODUCTS Co. (N.Y.)

In a letter we are naming a few Eastern custom finishing shops that might be interested in your proposition.—ED.

Who Supplies "Fluorthone"?

On page 122 of November issue, in "Random Comment", we notice two paragraphs about an insoluble plastic called "Fluorthone." Can you send us the name of the manufacturer of this material?—A.H.S., Inc.

It's a product of Carbide & Carbon Chemical Corp., 30 E. 42nd St., New York 17, N. Y.—ED.

To Overcome "Oil Bloom" on Lacquer Finishes

We read with considerable interest the article on page 63 of December, 1949 issue of INDUSTRIAL FINISHING, under the above title. We would appreciate your giving us further information on this subject, or giving us the name and address of who to get in touch with.—K. Co.

Refer to the ¼-page advertisement at the bottom of page 107, of that same Dec. issue.—ED.

Finishing Radio Cabinets

Some months ago, or it might have been a little longer, you had an article in INDUSTRIAL FINISHING, dealing with the manufacture and finishing of radio cabinets on a production basis. We kept this copy in our file but apparently it has been taken out and not returned. If available, would you please send us a reprint or copy of this article, as we would like to get this as soon as possible.—R. Mfg. Co.

We are sending you a copy of July 1947 issue which contains an illustrated feature article entitled, "Radio Cabinets Finished On and Off Conveyors". Perhaps this is the article you have in mind.—ED.

Appreciation

. . . At this opportunity, we believe, it is appropriate to express that your publication is more than a trade journal to us; it is a tool that gets things done for us. We wish you success in your good work for the coming New Year.—Pyramid Industrial Finishing Co., New York.

We Supply Air-Dry Crackle

In the November issue of INDUSTRIAL FINISHING, page 88, we notice a letter asking for information about "Air-Dry Crackle" finishes. We have been manufacturing air-dry crackles for a number of years and have observed that this novelty finish which produces an antique effect or a simulated leather effect, is again becoming popular.

Progress has been made in the manufacture of crackle finishes so that uniform patterns are easily obtained and are controlled by the air pressure used in applying them.

Would you be good enough to send us the address of the Harrison Paint & Varnish Co., and we will be happy to pass along any information that will be of help to them.—Maas & Waldstein Co.

We manufacture eight crackle finishes. All of them are of lacquer base—clear, white, black, cream, brown, green, gray and red. From time to time we have calls to manufacture a crackle finish in a special shade, and we accept orders on the basis of five gallons or more whenever a special shade is required. The regular crackle lacquers are stock items and are kept in stock in one gallon and quart containers.—H. Behlen & Bro., Inc.

The Harrison Paint & Varnish Co. is located at Canton, Ohio.—ED.

HOT NEWS about HOT LACQUER

LICENSES NOW AVAILABLE

for application of lacquers at elevated temperatures

UNDER U. S. PATENT NO. 2,150,096

INCREASE SOLIDS!

LOWER FINISHING COSTS!

by this patented process

invented by

LACQUER MANUFACTURERS! Write, wire or phone CSC today for A COPY OF LICENSE AGREEMENT and NEW DATA ON HOT LACQUER

CSC

COMMERCIAL SOLVENTS CORPORATION

INDUSTRIAL CHEMICAL DIVISION

17 East 42nd St., New York 17, N. Y.

Craftique, INC.

MEBANE, N. C.
Dec. 21, 1949

Mr. A. R. DeBurgh,
1741 K St., N.W.,
Washington, 6, D. C.

Dear Mr. DeBurgh:

Your conveyor has been installed in our plant approximately two and one-half months and we purposely waited to see how it would work out on finishing high quality furniture before writing you.

It is with a great deal of pleasure that we are able to inform you that your conveyor has increased our production approximately thirty per cent and best of all has actually improved the quality of our finish.

When we first considered the conveyor system we became convinced that it was absolutely essential that the system have a variable factor so as to take mixed loads of different sizes and designs on the same run. Your system was the only one that we were able to find that would meet these requirements.

Of course, as time goes on, the efficiency of the conveyor will be improved even over its present status. Then, too, we have found out that the amount of pieces run over the conveyor does not greatly effect the cost of finishing the products. In other words our finishing cost remains at a stationary figure - the same as if we were running a full production.

We might mention too, that without the conveyor it would have been necessary for us to have put an addition to our present plant.

To sum it all up, it has been a great space saver for us, and it has improved the quality of our finish and lowered our cost considerably. To our way of thinking it will pay for itself quicker than any piece of equipment we have ever installed in our plant.

With kindest regards,

Cordially yours,

CRAFTIQUE, INC.

President

L. P. Best/dnw

Investigate! **DeBurgh Conveyors**

Patented and Patents Pending

For Assembly, Finishing and Upholstering

1741 K St., N. W., Washington 6, D. C.

Vivid

Whether posing before the camera or casually walking down the street, you'll agree she's striking.

So it is with products coated with vivid finishes developed in our Creative Studio. They are striking on the showroom floor . . . they are equally attractive to the eye wherever used.

It is no coincidence that merchandise has such appeal after finishes conceived by our artists are applied. Predetermining the correct coating is an important part of our service.

Avail yourself of the talents of our artists. We will be glad to sample-finish your product at no cost or obligation.

No Tampering with Quality

ROCKFORD VARNISH *Company*
ROCKFORD ILLINOIS

Manufacturers of Protective and Decorative Coatings

Solvent Used to Clean Paint Heaters

Recently we installed Vicon paint heaters manufactured by Industrial Sales Co. in California for spraying pigmented lacquers at high temperature. This method is supposed to save considerable expense on thinner consumption. However, with our paint problem of changing colors frequently, we find that we are still using considerable thinner for cleaning purposes only. Our procedure is as follows:

1) Having completed application of one color, the insert container is removed from the pressure pot and another container of thinner is put in.

2) The first color is then chased out with the thinner until the thinner runs clean.

3) The thinner is removed and another insert container is put in the pressure pot with the next color.

4) The thinner is chased out with the new color.

This procedure involves opening the pressure pot twice and using a top grade thinner (which gets mixed with the lacquer to some extent) and throwing the thinner away after it is used once or twice, to avoid contaminating the different colors. Since we are forced to change colors from 8 to 15 times a day, and since it takes around a gallon of thinner per change, there is considerable room for savings. Our questions are:

1) Is there a better way to clean the heater unit, either in time or materials?

2) Is there some machine or process whereby thinner can be cleaned after it has been used?

Due to the excessive expenses of shipping thinner long distances for this purpose, we believe it will have to be done in our own plant.—F. C. IN TEXAS.

This problem is a common one to any production line where frequent color changes are made. It is still more important to an organization, such as yours, where light pastel colors are used.

It is difficult for us to make specific recommendations to you because of our lack of knowledge of your particular spray system. We would like to refer to the Coraltex Co. in Los Angeles. This concern has in use one of our VC-251-AR heaters for spraying Masonite tileboard. They use some 12 to 14 different pastel colors. However, they probably don't change as often as it appears you do.

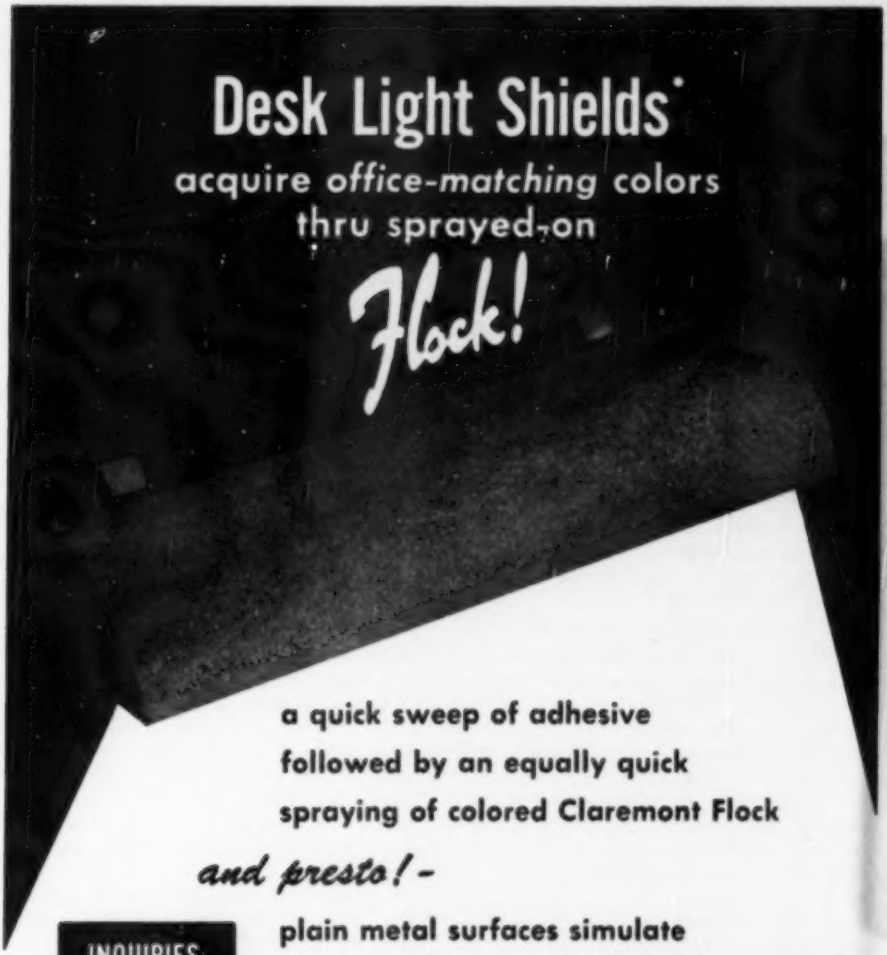
Mr. Burrell of the Coraltex Co. informs us that they use approximately one gallon of thinner to clean the machine and then use this same thinner with their primer material. This way there is no loss of thinner. Another step that they have adopted is to use a different hose for each color they spray. This might not be practical for you, yet it proves quite satisfactory for the Coraltex Co.

We suggest that in cleaning your paint heater, you use a short length of material hose to siphon thinner from a container through the pump and into the heater. If you so desire, the hose from the heater to the gun can be flushed by circulating the thin-

Desk Light Shields*

acquire *office-matching* colors
thru sprayed-on

Flock!



a quick sweep of adhesive
followed by an equally quick
spraying of colored Claremont Flock

and presto! -

plain metal surfaces simulate
the selling appeal of Walnut, Mahogany,
Maple, Blondewood—or any of 20
rich, enhancing shades!

* Flock processing by Suedo Finishing Co. New York City

INQUIRIES INVITED

• Claremont Flock is available in bulk, in colors, in quantity for special spraying-on finishing purposes. Write for samples, color charts, prices.

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

ner back through the pump and through the heater.

This is the first instance where the amount of thinner used in cleaning finishing equipment could be considered as a complaint. We too feel that an excess amount of thinner is being used, and we hope that some way of reclaiming some of the material used may be found.—INDUSTRIAL SALES CO. OF CALIFORNIA.

I am not in a position to speak too much about the Vicon paint heater operation, but I can describe to you the way we would handle your problem through our heater. This may give you a clue as to how to improve your performance and save thinners in changing colors.

1) With our circulating paint heater for lacquer use we do not need a pressure container. We have a tube to insert into a 5-gallon can or barrel, as the case may be.

2) In changing colors, we first blow back the paint into the original container. Blowing back is accomplished by holding a cloth in front of the spray gun. This forces the air stream to enter through the fluid nozzle thus forcing the paint back into the original container. We then place the tube into a can of thinner and allow the thinner to circulate for a few minutes while the painter is getting the next color ready.

3) The thinner is then blown back and drained from the unit and the tube is inserted into the next color.

Our experience has been that a can of thinner is good for ten to 20 changes of color. You can still further extend the use of this thinner if the sprayer will allow the dirty thinner to settle out overnight and, in the morning, carefully pour off the upper two-thirds of thinner from the can. In most cases the dirty thinner, settling overnight, settles out practically all of the pigments and solids that were picked up in the cleaning of the day before. You can even go a little further and use two cans of thinner for cleaning, the dirty thinner first, followed by fresh thinner the second time.

With our new circulating paint heater it only takes a few seconds of labor to change from one color to another. This may be a point of value for you also.

For your cleaning operation, you can use a much less expensive solvent than for your regular spraying. These clean-up thinners generally are less expensive and much more powerful in action. However, they are not suitable for actual spraying.—BEDE PRODUCTS, INC.

Painting Auto License Plates

Referring to the Associate Editor's published reply to a question under the above title (Dec. 1949 issue, page 86), how would you protect the edges of the plate and the edges of the holes from rusting, if the license plates were coated only by roller coating?

If you will check up in some of the states in which license plates are painted you will find, I believe, that the plates are cut and embossed and the background dipped on. One coat of enamel is suitable for the work. The dip method is the most economical way to finish where you have narrow edges.

Raised letters and edges, in contrasting color, are painted by rolling on the enamel as you indicate, which is the same way in which ink on a flat bed printing press is applied to the raised type. — CARL J. SCHUMANN, President of Hilo Varnish Corp.

In regard to the Q. & A. referred to above, we are sending you our Bulletin No. 107. Please refer to page 15,

A NEW TOOL TO

CUT FINISHING COSTS!

JOHNSON *Sand-Air*

AIR-DRIVEN, RECIPROCATING TYPE SANDING MACHINE

- ★ HIGH SPEED OSCILLATIONS
- ★ QUICK-CHANGE PADS
- ★ WET OR DRY SANDING
- ★ WEIGHS LESS THAN 5 LBS.
- ★ LESS MAINTENANCE

Simple, effortless operation of this new portable Sanding Machine produces surface finishes faster with better quality. Design-engineered to eliminate production interruptions and cut finishing costs, this machine has few working parts, high operating speed, and quick change pads. Because it weighs less than 5 lbs., it has flexibility for a variety of operations.

Try this new finishing tool in your own shop. Call your local distributor for demonstration without obligation.

JOHNSON ENGINEERING & SALES CO.

1139 BROADWAY ROCKFORD, ILLINOIS

Get this Bulletin!

Write for complete bulletin describing features and operation of the New Sand-Air.

SOLD BY LEADING DISTRIBUTORS

JOHNSON SAND-AIR FINISHES WET OR DRY • SANDING • SMOOTHING
FINAL FINISHING • WOOD • METAL • PLASTIC • CURVED • FLAT SURFACES

which shows two batteries of license plate ovens. The picture in the center of the page illustrates clearly your outline of the process to C.N.

We have built, as the catalog states, license plate ovens for 25 of the state penitentiaries, plus other "tag" ovens. There are a number of people that print and furnish inserts, city licenses, bicycle licenses, etc., these being produced outside penal institutions.

We are prepared to furnish ovens, roller coaters and temperature control equipment, in conjunction with license plate or metal tag printing.

We will appreciate your forwarding our catalog, or giving us the address of C.N., so that we may communicate with them and thereby extend the power of your fine magazine. —W. S. ROCKWELL CO.

Solvent Cleaning Setup for Intricate Machines

Would you kindly assist us in solving a problem in connection with the cleaning and refinishing of office machines in our repair shop?

We now clean adding machines, calculators, typewriters, and National Cash Register proof machines by removing cover plates and spraying them with cleaning solvent, using a spray gun and about 120-lbs. of air pressure. Cleaning results are satisfactory; no rust problem is introduced, and only a minimum of dismantling for the removal of parts which might be attacked by the solvent, is required.

The objection to continuing our present cleaning methods is the fire hazard which, at present, is causing additional concern in planning new quarters due to the high cost of an explosion-proof spray room.

Proposed use of water-base solvents has been rejected because of the excessive dismantling required, in addition to the difficulty of preventing rust. Carbon tetrachloride also appears to be undesirable due to the toxic effects and probable damage to paint finishes. No other alternative has been suggested.

The desired solution would allow us to spray-clean with a non-inflammable non-corrosive solvent in an ordinary paint spray booth, without special fire precautions. The requirement of superior ventilation equipment would cause no difficulty, since cyanide tanks already make that necessary. —B. of A.

Your greatest problem has been solved; you have a solvent that will clean without damaging the original paint film. To do that the solvent must be of a slow high-boiling type which is nowhere near the fire hazard that is found in the solvents of any of the paints.

Industrial paints—that is lacquer, air-dry enamel, synthetics, or wrinkle finishes—are all in a liquid state. They are held in the liquid state with solvents. A large number of the solvents are low boilers with a low flash point, and a large percentage of any of the paints are solvents. All of these solvents are more dangerous than the cleaning solvent you are using.

In every state all of these paints are sprayed in a standard spray booth with from 100 to 200-ft. air movement, and not in an explosive-proof spray booth or spray room.

Your trouble does not stem from your exhaust system; it is in the spray system. Using 120-lbs. of air pressure, you are breaking up the solvent particles so fine that a large percentage becomes a solvent fog which, being heavier than air, will lie in a sea of solvent fumes extending from the floor up to the height of a man's nose, if the odor can be detected upon entering the room. Also, the rebound of overspray is excessive.

There are two things I would sug-

RANDOLPH

DURABLE, LIGHT PROOF

WOOD LACQUERS

Available in

CLEAR GLOSS

SEMI GLOSS

SATIN FINISH

Randolph high quality wood lacquers have excellent build. Will give a print proof, uniform, hard finish with fine rubbing qualities

Grades suitable for every wood finish requirement.

Randolph

PRODUCTS COMPANY

Carlstadt, New Jersey

DOPES · LACQUERS · ENAMELS

gest: First, an exhaust fan—engineered by spray-booth engineers, and not by your plant engineer—should be installed at floor level.

Second, stop spraying with a spray gun. *Circulate the solvent with a small air-motor-driven pump from the tank or collecting pan through atomizing nozzles threaded onto the end of a piece of standard ¼-in. pipe.* (These nozzles are available for spraying at any angle; they can be obtained from some of the spray equipment manufacturers.)

The other end of the pipe can be attached to a piece of material hose—but be sure to use a solvent-free material hose with standard connections, and have the hose hooked up to a pump.

Now your office machines can be washed under just as much pressure without the excessive amount of overspray, and all of the solvent atomized will return to the tank or collecting pan to be reclaimed, thereby reducing your cost to a minimum.

If you wish, I will contact a local firm who will call and make practical recommendations for your cleaning setup.—W. BEACHAM, Crystal Laboratories, Inc.

Repairing Finish on Furniture

At present, in our finishing shops, we proceed as follows with damaged pieces:

An oil polish is first applied to clean the surface. After the oil is wiped dry, scratches and dents are burned in with a hot iron and lacquer stick. The burn-in is sanded level, and a padding compound is applied with a cloth. When the padding compound is dry, the piece is rubbed with fine steel-wool to obtain a satin finish.

Objections to this method of processing are: 1) the soft finish resulting (susceptible to press marks in handling) and 2) the considerable time required in its application.

We plan to spray and force-dry a lacquer or synthetic finish that will prove satisfactory over our lacquer-stick burn-ins and over any material previously used by the manufacturer.

The material we are seeking for this purpose must dry to a satin finish, requiring little or no rubbing. It cannot be a dark amber solution, as this would be unsuitable for bleached woods.—Macy's.

The procedure you are using is more time-consuming than it need be. The softness and tendency to print or mark in handling and storing, may be due to one or both of two things. For cleaning up the damaged surface, the use of an oil polish introduces the danger of leaving some oil in crevices, carvings, and other places difficult to clean out. The padding compound will bring out this oil, which interferes with the drying.

I think it is better practice to use mineral spirits to clean the surface, because mineral spirits do not leave any residue. What is not wiped off will evaporate. Also, mineral spirits will remove films of wax and oil residue that may remain after the finish was rubbed at the factory. In the event that mineral spirits soften the finish too much, a very dilute solution of soap chips in water will do the work, but be sure to clean with plain water after using the soap solution.

Mineral spirits may soften varnish, but will not affect lacquers or synthetics unless left on too long. If there is any doubt, the furniture manufacturer will probably be glad to inform you of the type of finish he is using.

The other thing that may be responsible for the softness of a repaired finish is the padding compound. A padding compound is necessarily slow-drying. It must contain slow-drying solvents in order to be prac-

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
NEW PERIOD HIGH QUALITY FINISHES MEAN LOWER FINISHING COSTS!
• FILLERS AND STAINS
• LACQUERS—CLEAR AND SEMI-GLOSS
• SEALERS
• LACQUER ENAMELS—FLAT AND GLOSS
• SYNTHETIC ENAMELS
Yes . . . top quality New Period Finishes mean lower finishing costs. Why? Because they're easier to apply, give superior coverage of lasting beauty, avoid expensive rejects. But don't take our word for it. Order a 5 gallon working sample* and see for yourself.
*At drum price.
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD
Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co.
109 IMLAY STREET BROOKLYN, N.Y.

tical. These solvents may penetrate finish deeply and come out so slowly that the finish will print after two days or more.

As an alternate procedure I suggest that you clean the surface with mineral spirits, burn in defects with lacquer sticks, and sand down level. Then sand the entire surface lightly with fine sandpaper. Wipe clean with tack rags and spray on a coat of semi-gloss lacquer. By asking your supplier for a lacquer that is non-discoloring, you can get the material you need. Force-dry about two hours at 125° to 135° F., or air-dry overnight. Then rub where it seems necessary.

This procedure is satisfactory for lacquers—and it is quite likely that most of the furniture you receive is finished with lacquer. If varnish has been used in the factory you will have to use a flat varnish for coating over repair work. It should air-dry at least overnight before rubbing—longer if possible. If a heat-cured synthetic has been used in the factory, you should obtain some of the same material for your repair work.

About the most practical way to test for lacquer, varnish or synthetic is to apply a little puddle of lacquer on the finish at an inconspicuous spot. If the old finish lifts, it is likely to be a varnish. If the old finish does not seem to soften, it is likely to be a synthetic. If it merely softens, but does not lift and dries out satisfacorily, then the old finish is probably a lacquer.—ROLLIN H. WAMPLER.

FOR

FINISHING AND RUBBING ROOM SUPPLIES AND EQUIPMENT

Immediate Delivery

We specialize in SUNDSTRAND Sanding and Rubbing Machines

Wilkinson Equipment & Supply Co.
6958 S. Wentworth, Chicago 21, Illinois

FOR ALL FINE FINISHES

TAC-ALL TACK RAGS

Packed bulk or individually. Prices and samples on request.

GEO. W. RENNER CO.
2309 Lillie St., Ft. Wayne 5, Ind.

Batzel and Glaser Named V.P.s of Midland Industrial Finishes

Mr. G. E. Batzel and Mr. M. A. Glaser have been elected vice presidents of the Midland Industrial Finishes Co., Waukegon, Ill.

Messrs. Batzel and Glaser have served as general manager and technical director respectively of Midland during the past four years. They will continue to head the operational and technical divisions. The appointment is in line with the continued growth and expansion of the company.

M. A. Glaser and G. E. Batzel

In his report to the directors, Mr. Robson, president of Midland, pointed out that the development of sales in the silicone coatings division has continued to play an important part in the company's progress. The company is one of the pioneers in this field and will have new developments to offer in the coming year.

SAND BY AIR IN STRAIGHT LINES...

Get a Better Job Faster with this Sundstrand Opposed Pad Sander

● Here's your sander for production or maintenance work on wood, metal, plastic or composition. It's a sturdy air operated machine — easy to handle because of vibration-free action.

You'll save 50% to 70% on production sanding — wet or dry.

Pads reciprocate in a straight line and in opposite directions — grain structure can be followed easily, producing finer final finish.

If your work includes sanding of wood, metal or composition on production or maintenance work, write for free complete bulletins. Ask for bulletin IF-49.

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

San-I-Seal Paint Prevents Mold and Mildew

A high gloss enamel that controls mold and mildew growths during its entire service life has been developed by the Glidden Co., 11001 Madison Ave., Cleveland 2, Ohio, for use in dairies, bakeries and other similar food processing plants, it was announced today.

Called San-I-Seal, the new product contains a water insoluble fungicide that does not evaporate or leach out. It dries to a hard, firm surface that will not soften from moisture and allow dust containing food particles, on which fungus spores feed, to adhere to the surface.

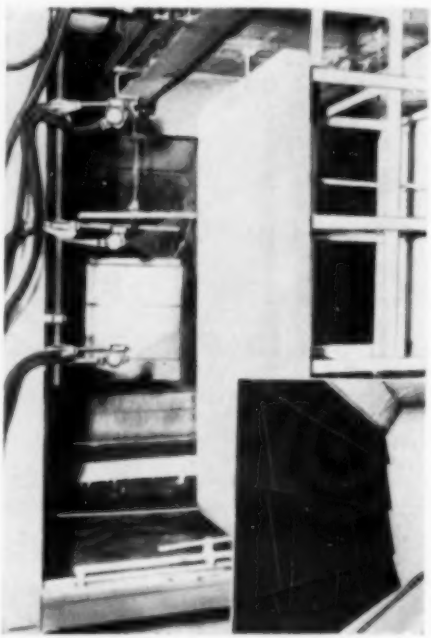
Although designed primarily for interior use, San-I-Seal may be applied to exterior surfaces—if the exposure is not severe, such as on ceilings of loading platforms—without affecting its fungi-preventive qualities. It is extremely washable.

Protection against fungi is provided by San-I-Seal for the average period of a good paint job, several years in many instances. It is produced only in white, although it may be tinted if desired, and can be either brushed or sprayed on the surface. One coat is usually sufficient on previously painted surfaces.

Paint Spray Booth Designed for Electrostatic Spraying

A notable reduction in maintenance is one of the merits claimed for a new spray booth specially designed by Despatch engineers for electrostatic and other automatic low-pressure spraying.

Among reasons for lower maintenance is the fact that air turbulence and stratification are eliminated and overspray is cut to a minimum because of the uniformity of air flow attained over the entire face of the booth. This uniform air movement is accomplished by the even distribution of make-up air through filters covering the entire rear wall of the booth, and by air outlets at four levels across the front curtain. The combination of low, uniform air velo-



A spray booth especially designed for automatic and electrostatic spraying.

BARRETT "FILWHIRL" ENAMELERS make easy work of many difficult coating problems

The Barrett Centrifugal Enameler

The Barrett "Filwhirl" Centrifugal Enameler provides a sure, clean and economical method of applying materials to parts or products that can be rotated. It saves coating material, time and expense. It is designed for bulk handling, and speedy production requirements.

It has proven highly successful in coating hellical springs, clips, clasps, zipper parts, bead and link chain, toys, automobile and luggage hardware, misc. metal stampings, castings, etc. Excellent results are also obtained with japan, lacquers, varnishes, paints, waxes. No drips or fatty edges.

Furnished in spindle post, fixed bowl, and carrier types, in several capacities. Safety features included and auxiliary equipment is available.

Send a few representative samples to be processed and submitted for your examination.

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

city throughout the booth and low pressure spraying through an electrostatic field is said to reduce paint losses considerably.

Another feature of this booth is that filtered make-up air is supplied to the conveyor entrance and exit vestibules to provide effective seals against factory air and dirt.

Water up to 50 gallons per minute per lineal foot, applied to the split curtain, minimizes paint accumulation; and splashing is eliminated by a specially designed wet splash guard. Water flowing over the booth floor collects overspray and carries it to settling tanks for recovery. Paint that is carried past the front curtain is effectively separated from the exhausted air by specially designed water-curtain scrubbers located behind the split curtain baffles.

The booth shown in operation is used for prime coating on the refrigerator line in the Seeger Refrigerator Co. plant, St. Paul, Minn. A similar booth handles the finish coat. These booths are units of a 3200-ft. conveyorized finishing system recently installed by the Seeger firm. The system's capacity is 110 refrigerator cabinets and their component parts per hour.

The newly designed spray booths are products of Despatch Oven Co., 619 S. E. 8th St., Minneapolis, Minn.

Stantite Spraying Primer

Stantite Spraying Primer, a product of The Stanley Chemical Co., East Berlin, Conn., is a new type of rust-inhibiting primer and preparation coating designed for use under either air-dried or baked finishes. It has excellent adhesion to steel, stainless steel, galvanized iron (with no

Stille-Young
LACQUERS
ENAMELS
FILLERS
PAINTS
STAINS

For Highest Quality Finishes
Beauty and Durability

STILLE-YOUNG
Manufacturers
2752 N. CLYBOURN AVE. • CHICAGO 14

"Wood Graining"
ADDS
Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

AMERICAN RICHWOOD PRODUCTS CO.
Graining Plate Division
104 E. Mason St., Milwaukee 2, Wis.

previous treatment), zinc, nickel, cadmium, brass, copper, aluminum (anodized or not), magnesium, glass, many molded items, and old finishing systems which are firmly attached to the surface to be coated.

One of the merits this new material has is its proven ability to prevent "rust-creep"—the extension of corrosion underneath a top coat which may have been broken by use or abuse.

According to the manufacturer, metal surface preparations other than cleaning are of no added value when Stantite Spraying Primer is used. It dries quickly. Baking top coats, including two-coat systems, may be applied over it with greatly improved results.

The adhesion of all types of top coats to this new spraying primer has proved to be excellent. This includes air dry and baked lacquers, vinyls, alkyds, ureas and melamines, enamels, japans, paints, etc.

Respirators Protect Workers Against Dust, Gas and Vapor

A new line of twin cartridge respirators specifically developed to provide protection for the first time against seven respiratory hazards through a basic face piece and seven interchangeable filters is announced by American Optical Co., Southbridge, Mass.

Describing its new R5000 respirators as "the most versatile of their kind," the company states that the seven filters protect workers against: 1) a combination of all dusts; 2) organic vapors; 3) acid gases; 4) combined acid and organic gases; 5) ammonia; 6) combination of organic vapors and all dusts, and 7) metal fumes.

In effect, the company adds, the new development gives a user seven respirators in one through the seven

interchangeable filters which can be quickly screwed into the respirator's twin filter holders. This feature eliminates the expense of stocking seven types of respirators for those who need protection against respiratory hazards commonly found in industry.

The basic face piece of the new respirators is molded from durable rubber and has a new "rolled" edge that curves inward to give a snug fit without leakage. Other features include a new flexible fitting brace for shaping the respirators to individual features, a highly efficient inhalation and exhalation system, and increased field of vision through thinner filter cartridges.

Rustproofing Coating

The International Rustproof Corp. of Cleveland, Ohio, announces the use of a new "homogenizing" process for its non-drying rustproofing product, Ircolene No. 19. Homogenizing of Ircolene No. 19 greatly increases its corrosion resisting qualities. Ircolene No. 19 now provides an extra tight adherent film over steel and other metals to prevent oxidation.

Humidity and salt spray tests on the improved product, with 95% relative humidity at 95° F., show a minimum film life of 5000 hours. On salt spray tests, (20% NaCl at 95° F.), minimum film life is 150 hours. On both tests a coating of zinc phosphate under Ircolene No. 19 more than doubled film life.

Ircolene No. 19 is used extensively by industry to protect non-ferrous metals from staining, tarnishing and to maintain top condition while in storage. Although similar to oil preparation, it is more effective and its transparent coating does not detract from the original coating underneath, such as polished steel, etc.

I. C. D. FORMULA NINE
NON-INFLAMMABLE
« wax free REMOVER »
I·C·D
9
FORMULA
NINE
for paint, varnish, lacquer, baked enamel, adhesives
EASY TO APPLY—NO AFTER CLEANING
I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.
BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.
ORDER TRIAL GALLON AT DRUM PRICE
INDUSTRIAL CHEMICAL DEVELOPMENT CORP.
515 FLUSHING AVE. BROOKLYN 5, N. Y.

BINKS SPRAY SYSTEMS

3 ways to better finishes... faster

Uniform, fine finishing **Fast, economical operation**

Long, trouble free life

Binks "Big 3" spray guns are the favorites of industry everywhere. They lead the way to better finishes... faster. When Binks precision-made guns are on the job, you know that a fine, smooth finish will enhance the value of your product; rejects will be cut to a minimum; production will be greater... costs lower.

Take hold of a Binks spray gun... any one of them. Feel its perfect balance. Pull back the smooth, easy-operating trigger. Note the fast uniform coverage of its adjustable spray pattern... the convenient back-of-gun location for controls... the precision construction of all parts. Tough drop-forged bronze is used for the head and air nozzle. The material nozzle is made of hardened steel with self-centering needle. As a result of such sound engineering and manufacturing know-how, Binks guns stand up under hard production use... that's extra economy for you. Remember, too, that Binks has a full line of integrated finishing equipment from guns to finishing systems.

Ask the Binks Finishing Methods Research Department for help on your finishing problems. Whatever finish you use, or product you make, this new Binks Department will suggest methods for obtaining better, faster, more economical results... at no cost to you.

"Binks is justly proud of its 'Big 3' production guns. They produce, at minimum cost, the high quality finishes demanded by the buying public."

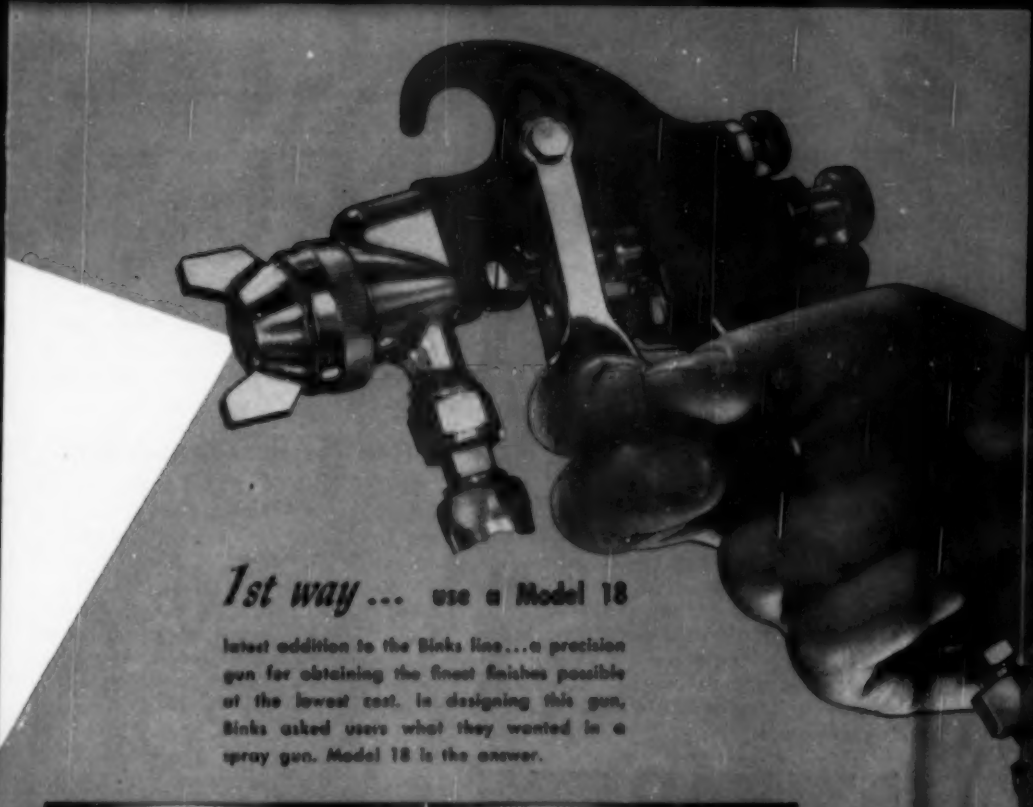
J. J. Roche
Chairman of the Board

Write now for free information on these guns.

Binks MANUFACTURING COMPANY

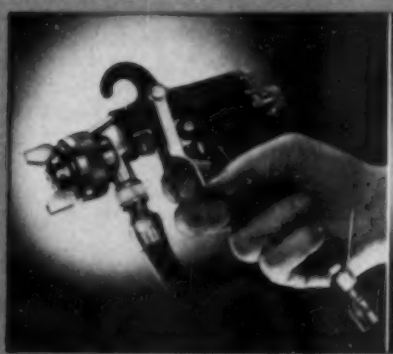
3116-40 Carroll Ave., Chicago 12, Ill.

NEW YORK DETROIT LOS ANGELES ATLANTA BOSTON CLEVELAND
DALLAS MILWAUKEE NASHVILLE PHILADELPHIA PITTSBURGH
ST. LOUIS SAN FRANCISCO SEATTLE WINDSOR, ONTARIO, CANADA



1st way ... use a Model 18

latest addition to the Binks line...a precision gun for obtaining the finest finishes possible at the lowest cost. In designing this gun, Binks asked users what they wanted in a spray gun. Model 18 is the answer.



2nd way... use a Model 7

a heavy-duty production gun. This is a long time favorite with wide acceptance in the finishing field. Gun body is drop-forged aluminum with a tough, black electrolytic coating. All parts are of long lasting, wear resistant materials.

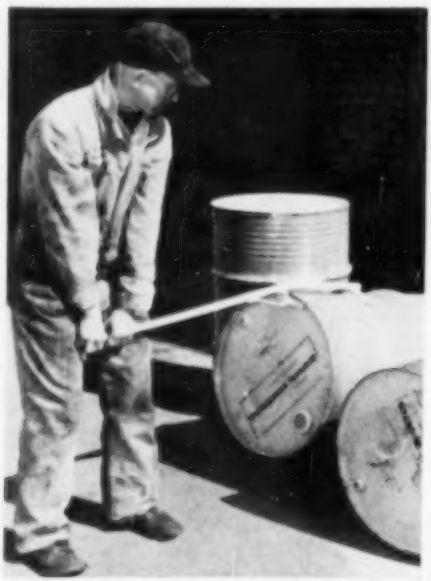
3rd way... use a Model 19

a truly remarkable, lightweight production spray gun, employing the same nozzles as Model 18. Reduces fatigue. Body is nickel-plated aluminum. Cartridge-type air valve is economical, easily replaced as a unit.

Drum Upending Tool

A new barrel and drum tool for upending, designed with a special tension clinching feature for positive safety, is announced by the D. S. Campbell Co., 6110 Euclid Ave., Cleveland 3, Ohio. The new drum and barrel handling tool, called "E-Z Up" has no moving parts to slip or break. It promises to take the drudgery and hazard from drum handling, according to the manufacturer.

Specially designed V-shaped strap-iron saddles are located at the point of leverage and the point of lifting. The leverage saddle at the end of the tool laps over the top expanded rolling hoop, while the lifting saddle fits tightly to the drum head at two points under the rim which supports the lifting weight. As leverage is applied, pressure forces the saddles to spread and grip the drum surfaces to prevent slipping or rolling.



A handy tool for moving or up-ending heavy drums easily and safely.

This tension-clinching feature adds safety for workmen because drums cannot slip or roll, regardless of how greasy or slippery, states the manufacturer.

Weighing only 6-lbs., E-Z Up is made of 1-in. heavy-wall tubing of all welded construction. Only 42-in. long, the handly drum and barrel tool is easy to store when not in use.

New Patented Tack Tester

The Zapon Tack Tester, a small, easy-to-operate device for measuring film thickness has been patented by the Atlas Powder Co., for manufacturers who use industrial finishes.

The device consists of a counterbalanced angular piece of aluminum with an inch-square section wrapped with foil. For most tests, the foil-wrapped portion, pressed down with a one-pound weight, is placed on the film to be tested for five seconds. If, after the weight is removed, the foil pulls away from the coated surface in less than five seconds, the film can be considered to be tackfree. The calibration angle, weight and time of contact may be varied, if necessary, for special types of coatings.

Zapon Tack Testers may be obtained from the Industrial Finishes Department of the Atlas Powder Company at either Stamford, Conn., or North Chicago, Ill.

Spray Booth Coating

A removable plastic coating designed to simplify spray booth maintenance is announced by Specialty Coatings Laboratory, 1721 North Water St., Milwaukee 2, Wisc.

The coating is applied to the interior surfaces of the booth by either spraying or brushing, one gallon usually being sufficient to coat the interior of one average industrial spray

STAINS • GLAZES

- LACQUERS
- SEALERS
- FILLERS
- ENAMELS
- UNDERCOATS
- SHELLAC
- SPECIALTY FINISHES

FOR APPLICATION BY ALL METHODS

Industrial Finishes in Step with the Times

Stains and Glazes to produce all modern or traditional colors with rare attractiveness. Specially formulated to give easy application with quick, dependable drying.

JAMES B. DAY & CO.

CHICAGO 14

Public Demand Persists for MODERN

WOOD BLEACH

Secure Your Results

Make PERFECT BLANCHIT-BLEACHED Finishes

Use

BLANCHIT

Trade Mark Reg. U. S. Pat. Off.

THE ORIGINAL

A patented wood bleach which has been improved.

L. R. van ALLEN CO.

Patent Licensee

Chicago 54, Ill.

RESTORE PAINT IN 2 MINUTES

PER GALLON WITH MIRACLE BLUE - BOY 5 GALLON PAINT REJUVENATOR

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years---thousands of satisfied users.

Write for folder & prices

MIRACLE PAINT REJUVENATOR CO.

127 E. 9th Street St. Paul 1, Minn.

booth. The booth can be put into operation immediately after it is coated. Whenever an undesirable paint accumulation builds up on the interior surfaces of the booth, the plastic coating can be peeled off in sheets, removing with it all paint overspray and leaving a clean dry booth.

The booth coating is completely waterproof and has found application to the water panel of waterwash booths. The coating is also highly resistant to the regular solvents used in paints and lacquers. It is furnished in white to aid the operator's visibility.

To Test Adhesion of Paint Films

The Adherometer, developed in the Research Laboratories of Interchemical Corp., is designed to measure the stripping force, in dynes, required to remove a paint film from the surface of a metal test panel.

The test panel, 6-in. in length, is caused to move slowly under a hard ivory cutting tool 4-mm. wide, which has been beveled to a thin straight edge. The ivory tool is held by a lever arm which is weighted to hold the cutting edge firmly against the metal surface of the panel. This lever arm, mounted on a practically frictionless roller bearing, is connected to a weighted pendulum causing it to swing outward to an extent proportional to the force being utilized in stripping the 4-mm. band of paint film.

It has been little realized, heretofore, that stripping force, whether tested with the thumb nail or pen knife, or accurately measured with the Adherometer, is actually a composite of the adhesion at the film-metal interface and the toughness or resistance of the film to deformation. The latter force is proportional to the thickness of the film, while the former

Be Fresh . . . Stay Fresh!
on
PAINT SPRAY JOBS
wear a DUPOR Chemical Cartridge Respirator No. 10

Ideal for paint, lacquer, enamel vapors, fumes, gases, etc. Face mask gives air-tight fit, controlled breathing, panorama vision with no blind spots. Cartridges are of colored plastic for easy identification! When ordering, specify the WHITE for Code A; BLACK, Code B; YELLOW, Code AB.

Sample sent
$4.50 pp

H. S. COVER
South Bend, Ind.

COVER'S
GAS-TIGHT
FOG-PROOF
GOGGLES
$1.65

is solely an interfacial attraction dependent on the formulation of the paint and the kind of metal surface used. By using the Adherometer to measure a series of panels coated with varying film thicknesses, the stripping force can be resolved by simple calculation, into the two basic components. This provides the research man with an important new tool in his evaluation of paint films.

This tool is available through Henry A. Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

The scratch (resistance) hardness and adhesion of paint, lacquer and enamel films can be tested and definitely measured by a precision instrument called the Arco Mocroknife. It is possible to measure the relative adhesion of a coating to base metals and the various subcoatings.

Heat-Resistant Silicone Coating

The Dampney Co. of America, Hyde Park, Boston 36, Mass., manufacturer of specialty protective coatings, announces the addition to its product line of Dampney Silicone Coating Aluminum, for weather-exposed service at temperatures to 750° F.

This new product utilizes the unique characteristics of silicone resins. These semi-organic materials combine high inertness and heat stability with unusually high water repellency and low moisture absorption to provide heat-resistant and weather-resistant surfacing of exceptional durability.

Dampney Silicone Coating is formulated to withstand either continuous exposure to high heat or intermittent heating and chilling, and all conditions of weather exposure, as well as chemical-fume attack. It is therefore ideally suited for out-of-doors service

INFRA-RED OVENS
(Lamped or Lampless)
Individually engineered in stationary, conveyorized, portable or special designs
Manufactured by
THE MISKELLA Infra-Red COMPANY
Main office: 7305 Grand Ave., Cleveland 4, Ohio

PEARL ESSENCE
"Astralucine Brand"
Produces a high luster
on a variety of finishes
Write for your free copy of our informative Technical Bulletin
"Pearl Essence Finishes"
—what they are and how to use them.
Argenta Products Co.
EASTPORT, MAINE

TOMORROW'S Products Tested TODAY
A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.
SOUTH FLORIDA TEST SERVICE
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

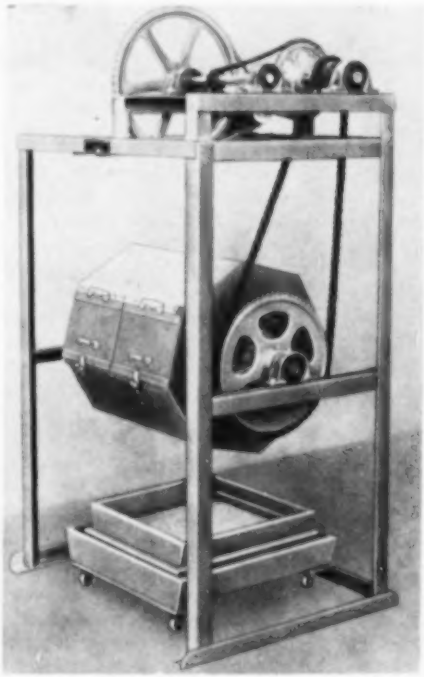
in industrially contaminated atmospheres, as well as for exposure to atmosphere under shelter, and is recommended for application to such equipment as stacks, furnaces, boilers, heaters, ovens, steam lines, gas burners, and exhaust mufflers.

The exceptionally fluid consistency of this material gives it excellent workability. Its high spreading rate permits rapid and easy application by brush or spray to any reasonably well-prepared iron, steel, galvanized, or other metal surface, either new or previously in service. Recommended coverage is 1000-sq. ft. a gallon. Drying time, one-half to three hours.

New Tumbling Equipment

A new and improved tumbling machine is announced by the Lupomatic Industries, Inc., manufacturer of Tumb-L-Matic processes, equipment and supplies, 4510 Bullard Ave., New York 66, N.Y.

One of the improvements over former models is the mounting of ball bearings on a raised frame for posi-



All parts are conveniently accessible.

tive direct support to all drive mechanism.

The chain gear drive, with constant-speed motor, assures an unvarying steady power at all times—an essential factor in all tumbling processes. When a change of work calls for a different speed the unit can be readily converted to the speed required. All parts of the equipment are readily accessible for easy lubrication and simple maintenance.

Can it be Sprayed Automatically?

Manufacturers can now find out, whether or not any of their products can be spray finished automatically. This new service is offered by Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. Manufacturers are invited to send in samples of their products for trial finishing. Without obligation, Binks will determine whether or not the product can be finished automatically. If so, a report will be given showing the production and cost which can be expected, based upon actual measurement.

Ferro's Cleaning Compounds Transferred to Mac Dermid

The Ferro Enamel Corp., Cleveland, Ohio, announces transfer of the manufacturing and distributing rights of its complete line of Ferro Cleaning Compounds to MacDermid Inc., Waterbury, Conn. Ferro's decision to transfer the cleaning portion of its business to MacDermid was prompted by its desire to concentrate on newer aspects in the porcelain enameling field, at the same time turning over the sales and service phases of the metal conditioning to MacDermid engineers, whose 28 years of experience qualify them as one of the leaders in service and supply in metal finishing.

Ferro Metal Cleaning Compounds will be manufactured by MacDermid, at the firm's plants in Cleveland, Chicago and Waterbury, with warehouse stocks also available in New York, Detroit and St. Louis. Technical representatives and service men are located in these and other industrial areas. The sale of Ferro Metal Cleaners will be through regular MacDermid distributors in the Midwest and Southern States, and through MacDermid representatives in the Eastern States. However, Ferro Enamel will resell these cleaners exclusively to the porcelain enameling field. The West Coast is in no way affected by this new arrangement, as it will continue to be serviced by the Ferro Enamel Corp. of Los Angeles, Calif.

For fine decorative finishes use —

THE MEARL CORPORATION
153 WAVERLY PLACE **NEW YORK, N. Y.**
"World's Largest Producer of Pearl Essence"

Your Signal! **9-8-7-0**

CLEAR METAL LACQUER

For

silver, cadmium, zinc, copper, brass, aluminum.

OUTSTANDING

1. Adhesion to metal surfaces
2. Resistance to sulfur tarnish
3. Resistance to oxidation
4. Resistance to perspiration
5. Resistance to abrasion

Pale in color. Takes 100-200% reduction. Dries under 15 minutes.
A premium product — priced at ordinary lacquer levels.

THE VARNISH PRODUCTS COMPANY
5206 HARVARD AVENUE
CLEVELAND, OHIO

New Phenolic Plastic Varnish

A new durable protective finish, developed and tested as a coating for interior and exterior service, is announced by Pioneer Chemical & Mfg. Co., 1854 Columbus Road, Cleveland 13, Ohio. It is easily brushed or sprayed to a mirror-like gloss and smoothness; is highly impervious to acid, alkali, heat or cold, paint remover and solvents, fire or alcohol.

Though hard and scratch-resistant, this new finish bonds itself so well that blistering, cracking or peeling have not shown in the toughest temperature and chemical tests. The film was unaffected after a boiling lye test of two hours duration.

Extra tough and resilient, this new coating is not marred by the heaviest traffic and maintains its high gloss after hundreds of washings with strong cleaning solutions. It withstands extreme exposure to the elements for years without injury to its beautiful finish. It is available clear or in colors; dries overnight.

New Portable Dust Collectors Announced by Kirk & Blum

To fill a need in industry for a heavy-duty portable dust collector, The Kirk & Blum Mfg. Co., Cincinnati, Ohio, announces the new type "M" unit dust collector. Three models are available in 450, 900 and 1800 cubic feet per minute at high velocity.

These heavy duty collectors can be set up anywhere to serve one or several machines for any period of time —or they can be readily moved to meet changing needs. They eliminate the need for long, costly pipe runs to remote areas of a plant where one or a few machines are located.

Each unit is compact, self-contained and ready to operate. The Type "M" units handle dust from grinding, buffing, and polishing metal-working machines and similar dust sources. Each unit consists of motor, exhauster, centrifugal pre-cleaner and steelwool filter after-cleaner.

Metal Cleaning Solved By Specialists

(Continued from page 29)

operations. Also the abrasive constituents of buffing and polishing compounds, and metallic particles picked up in the course of machining, grinding and polishing of work. Still another common, important contaminant within this category is generally known simply as "shop dirt".

Seldom is the problem of cleaning one that involves merely the removal of any one type of foreign matter. Metal cleaning often involves the removal of different types of dirt, sometimes in each of these principal classifications. That is why results often vary from one plant or shop to another.

Difference in the metal or alloy in proces, a slight change in its method of handling, use of different fabricating compounds—any one of these factors or a combination of them may very well account for a substantial difference in the results obtained, even though high-grade cleaning compositions or solutions are used.

With metal cleaning and degreasing operations seldom being identical, *individual attention to each problem by a person qualified by training and experience is the answer.* Inevitably, the results obtained are faster production, better quality, fewer rejects, lower unit costs—results that repay many times over the exacting attention a specialist gives to the problem.

The services of such specialists—they might be well called "cleaning engineers" by the nature of the work that they do—are readily available today to industrial finishers. One cleaning materials manufacturer, for example, renders personal advisory service and practical in-plant help through a nation-wide staff of more than 100 technical sales and service

SUPERIOR IN EVERY WAY!

No. 290 SPEKALUMINITE Decorative ALUMINUM Coating

SPEKALUMINITE is Tough—Will Not Peel or Flake—Rust and Tarnish resistant (200 hrs. salt spray test)—Self priming for metals and plastics—Produces a beautiful Cadmium-Bright finish—COSTS LESS—LOOKS BETTER—LASTS LONGER—Easy to apply—Requires no expensive equipment.

WRITE FOR BULLETIN F AND FREE SAMPLE

(Distributors Inquiries Invited)

Special Chem. Corp. 30 Irving Pl. New York, N. Y.

CONSTANT STUDY AND RESEARCH . . .

one of many reasons for the

INDUSTRIAL FINISHING leadership

enjoyed by the

NATIONAL

LACQUER & PAINT CO., INC.

7415 S. Green St. Chicago 21, Ill.

representatives. These men give a finishing department or shop all the benefits of their experience gained through practical everyday work in devoting themselves exclusively to problems concerned with cleaning.

In the final analysis, cleaning before painting presents a problem, and at the same time, offers an opportunity.

Today, with manufacturing costs of practically every metal product continuing to go up, no plant or shop can afford to overlook any material, method or idea that offers an opportunity to economize on the production line through greater productivity or cheaper processing.

Savings always have been important to industrial finishers, of course, but they are more so now that climbing cost-curves must be checked and curbed. Cleaning is one operation which often presents an opportunity to help realize the attainment of this vital goal. This is particularly the case when the possibilities of that opportunity are fully explored and evaluated by one who makes such a task his life's work.—A. P. SCHULZE.

Random Comment on the Industrial Scene

(Continued from page 9)

United States Air Force Engineering Division at the Wright-Patterson Air Force Base, Dayton, Ohio.

The suit, only one of its kind so far developed, is made up of 18 layers of glass fiber, glass fiber batt, glass fiber net, neoprene coated glass fiber, honeycombed cotton cloth, silver foil, aluminum foil and nylon arranged so as to provide the best possible protection yet devised against both the conductive and radiative type of heat experienced in aircraft crash fires.

In all, the suit is only about ½-in. thick, and gives the lowest possible bulk and weight consistent with its insulation function.—MARTIN STAR.

* * *

Only International Fair to be held in 1950 in this country will be held in Chicago. With the postponement of the Detroit fair to 1951, American and foreign manufacturers will confine their exhibits to Chicago.

Exhibits will be housed on Navy Pier, the International Amphitheatre, the Coliseum and the Chicago Arena. According to I. S. Anoff, president of the Chicago Convention Bureau and members of the board of the First United States International Trade Fair, if enthusiasm continues on the same level, it will be necessary to procure additional exhibit space.

The Railroad Fair, held in Chicago for two successive seasons, was highly successful. There is no doubt that this new fair will attract vast crowds of curious people, all of them potential buyers.

Crawford Now Ind. Sales Mgr. of Standard Varnish Works

Hugh C. Crawford has been appointed to the position of Industrial Sales Promotion Manager of Standard Varnish Works, New York, N.Y.

Hugh C. Crawford Ind. Sales Mgr. of Standard Varnish Works, New York.

Mr. Crawford has been active in the industrial finishes industry for many years and has held several important positions in sales and official management.

His efforts will be directed toward enlarging the sales of Standard's well recognized line of general industrial finishes.

Keep Lacquer Viscosity Low

Be sure YOUR solvents also offer these advantages:

1. **High solids content**
2. **Freedom from cold-check problems**
3. **High diluent tolerance**
4. **Low specific gravity**

Because Ketones are the most *powerful* lacquer solvents, they give you the lowest viscosity formulations when used with any practical resin-nitrocellulose combination.

Have you heard the *full* story on the cost-cutting advantages of Ketone Solvents? Call your Shell Chemical Representative and have him point out the basic factors that will enable you to profit by the competitive advantage of Ketone formulations.

SHELL CHEMICAL CORPORATION

Eastern Division: 500 Fifth Avenue, New York 18 Western Division: 100 Bush Street, San Francisco 6

LOS ANGELES · HOUSTON · ST. LOUIS · CHICAGO · CLEVELAND · BOSTON · DETROIT · NEWARK

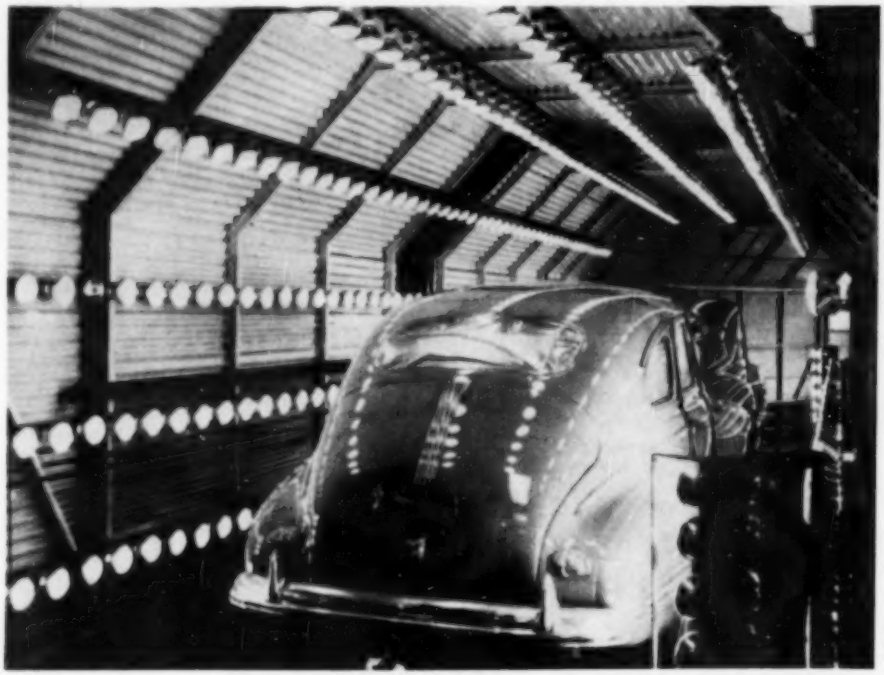
Infra-Red Drying Setup in Auto Paint Shop

THE Durable Auto Painting Co., of Los Angeles, one of the largest on the Pacific Coast, is equipped with what is claimed to be the largest bake oven too. Occupying 910-sq.ft. in an area of 25,000-sq.ft. devoted exclusively to automobile painting, the huge oven is equipped throughout with infra-red lamps.

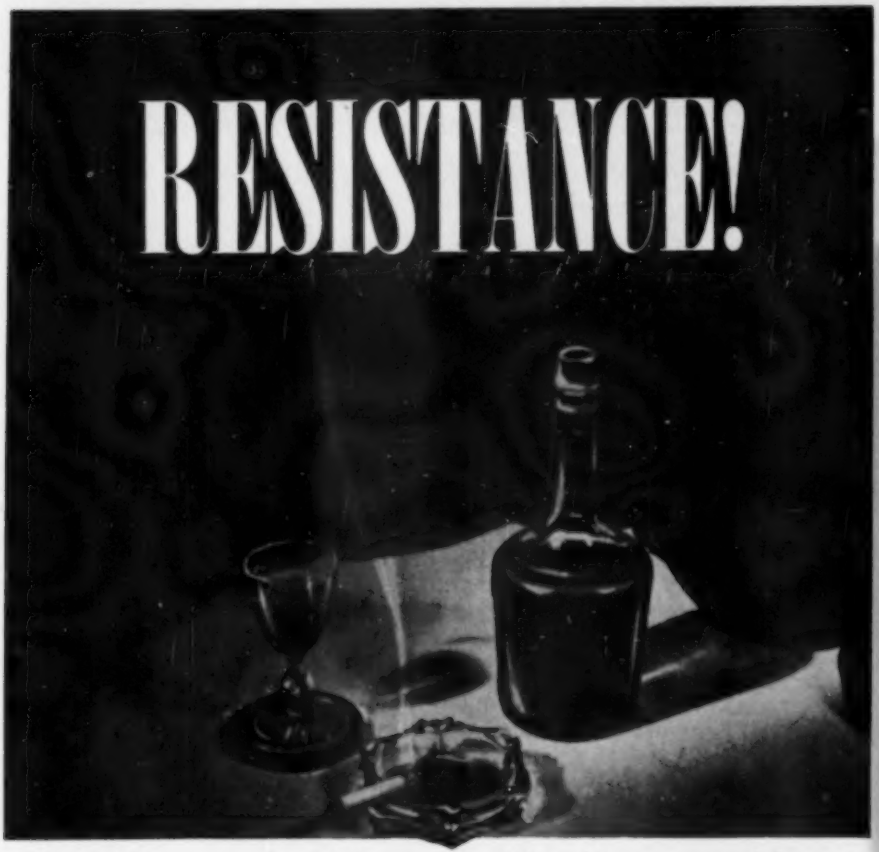
Incoming cars to be repainted are first completely cleaned and hand-sanded by skilled workmen. After careful masking of chrome and glass work, trained spraying artists apply the latest scientifically-developed synthetic enamels. This work is done in glass enclosed, filtered-air spray booths.

From spray painting, the cars go into the gigantic baking tunnel. Here, the 528 individual infra-red lamps thoroughly season and bake the enamel with their intense, penetrating heat. The result is a smooth, durable, dust-free finish. Because of the efficiency and speed of this drying operation, and the other extensive facilities for volume service, the company's 100 skilled workers are able to have cars ready for customers after only three or four hours.

Editor's Note: Article and photograph supplied through courtesy of the North American Electric Lamp Co., 1030 Tyler St., St. Louis 6, Mo.



Part of drying tunnel at Durable Auto Painting Co., Los Angeles, showing arrangement of infra-red lamps. Photo, courtesy of North American Electric Lamp Co., St. Louis, Mo.



If that's your problem... make it our problem!

Kirker industrial finishes in both enamels and lacquers are based upon carefully compounded, fully tested formulas, to give maximum resistance to many elements, from cigarette burns to weathering— from alcohol to abrasion.

These basic formulas may be "tailored" to your exact needs—adapted to your one particular application in every detail, so that the requirements of even the most troublesome problem in finish resistance are met completely, quickly, economically.

An outline of the essentials of your problem will receive prompt attention.

KIRCO MODERN COATINGS

Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

Industrial FINISHING Editorial

An Important Executive's Competitive Program

The Senior Vice President of a nationally known manufacturing firm having headquarters in Chicago, issued a Year End Statement which contains interesting and valuable notes in reference to a plan or program for moving ahead profitably in the face of present highly competitive conditions. Some excerpts of what he said are as follows:

"Lowering of manufacturing costs—perhaps by 'engineering out' some of the labor content of fabricated goods—and development of new products with new utility may be industry's best bet to counteract 'filled pipe lines' and surfeited demand for present products. And, it may provide part of the answer to static or declining sales volume in the months ahead.

"For Industry to 'make it better and make it cheaper' at a time when taxes, materials, labor, fuel and many other factors seem to be heading for higher levels is obviously a big order. However, accomplishment of that objective is both the intention and expectation of this compnay.

"We believe that the consumer has finally stirred to the realization that there are too many free riders fattening on what he pays for merchandise. He is saying, in effect, to the manufacturer: 'You feed 'em or figure out a way to get them off. I'm not buying until you do so.'

"In the absence of any indication of any immediate lowering of government taxing and spending, and in view of recent and threatened increases in materials and labor costs, we have turned to inventive and design skills—engineering; and to technological skills—manufacturing—as about the only areas to which we can look for counteracting the drag of the 'free riders.'

"Within the past six months we have withdrawn one line of equipment from the market and have substituted a competitively priced line, of simplified construction but with no impairment of untility or quality. Within the first half of 1950 we expect to market a new item . . . which may create both obsolescence of equipment now in use and a competitive advantage resulting in our getting a larger share of the total volume in the field.

"Other items representing design or utility advances, which are scheduled for 1950 launching, include several new and improved items of equipment. In each case, economy in materials and labor content has been a consideration, with no sacrifice in quality or utility. And, from labor's earnings standpoint, we believe that increased volume will more than offset any reductions in labor content."

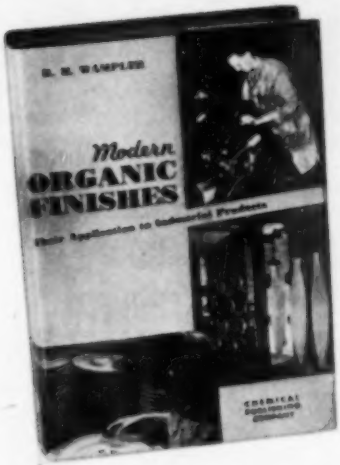
Well, if you are curious to know who made these statements, it was Frank A. Hiter of Stewart-Warner Corporation.

Save the Finish and Avoid Rejects

What folly it is, after products have gone through an entire finishing process, to allow some of them to become rejects because they were not properly protected during the short interval of handling and temporary storage before packaging for shipment.

A careful study of handling meth-

A "MUST" For All Finishers!



ORGANIC MODERN FINISHES

"Their application to Industrial Products"

This book contains 452 pages of the latest information on finishing. It describes modern finishing materials and equipment for their application, drying, conveying, etc., so that the reader may have an overall picture of modern industrial applications. Throughout, the main emphasis is on proper selection and use of materials to get the best possible finish at minimum cost.

It's Complete — Note the Contents

MATERIALS: Oleoresinous and Alkyd Varnishes and Enamels; Cellulose Lacquers; Spirit Varnishes, High Integrity and Specialty Finishes; Stains, Wood and Metal Fillers, and Miscellaneous Finishing Materials.

MODERN APPLICATION METHODS:

Spray Painting; Dipping and Flocoating; Roller and Knife Coating; Tumble and Centrifugal Finishing; Special Processes.

DRYING METHODS:

The Drying Process—Air Drying; Force Drying; Baking by Convection and Radiant Heat; High-Frequency Baking.

PRODUCT HANDLING IN THE FINISHING DEPARTMENT:

Conveying Methods.

FINISHING PROCESSES:

Wooden Furniture and Cabinet Finishing; Prefinishing Wood, Plywood and Hardboard Structural Materials; Special Industrial Wood Finishing Problems; Finishing Paper, Cardboard and Fabrics, Finishing Plastics and Resin-Impregnated Wood; Cleaning and Surface-Treating Metals; Finishing Automotive and Railway Equipment; Finishing Sheet Steel Products; Finishing Iron Castings; Finishing Aircraft; Rubbing and Polishing Organic Finishes.

SOME GENERAL CONSIDERATIONS:

Good Practice in the Finishing Department; Testing and Evaluating Finishes.

The price is $8.50 and to eliminate bookkeeping we ask that cash accompany order. Sold on a money-back guarantee. Money refunded promptly and without any questions if you are not satisfied.

INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**

ods through the finishing room and on the assembly lines will reveal some of the reasons why some products become rejects. Most operators use care in handling parts or the assembled product, but the human element must be considered. Also, on a production line, products must move if anything is to be accomplished. The wise course to follow is to do what is necessary to protect the finish.

Means of protection will depend upon the size and type of product. For heavy products, wood skid frames attached to the legs or lower part of the piece may be the answer; or heavy cardboard tubes may be used to cover the metal supports of trucks or conveyor carriers. Other products, such as round bottom washing machine tubs, may require individual corrugated cartons for shop movement. Many small products can be adequately protected with pressure sensitive tape which, upon removal, leaves no residue of adhesive.

To paraphrase the well advertised slogan of the paint industry, "Save the Surface and You Save All", Save the Finish and You Save the Surface. Also, you save rejects which are always a costly drain from profits.

Adequate Light for Finishing Operations

In order to have adequate light for finishing, a sufficient number of lamps of the proper wattage must be installed. The Illuminating Engineering Society has published the IES Lighting Handbook which gives levels of illumination in footcandles for various operations, and for different locations in the plant.

Placement of light fixtures is important to avoid either glare or shadows. The services of a capable illuminating engineer may be the means of providing better light and improved shop conditions.

However, adequate light is impossible if reflectors and lamps are allowed to become covered with dust, grease or paint overspray. The cleaning of overhead lamps and fixtures can be comparatively simple through the use of a portable platform which is adjustable for height. These platforms help to promote safety, speed and efficiency in the cleaning of factory lights.

Finishing Troubles and Production Problems

Every manufacturer that uses finishing materials has finishing troubles and production problems at some time or other. Where is he to learn how to solve them to the best advantage? Well, several sources of information are available. First, are men in his organization. Often a meeting of minds, brought about by a sincere desire for mutual understanding, will elicit ideas, suggestions or recommendations which will point to what is really needed to develop the information wanted.

Assuming that no one in the company personnel has a satisfactory answer, then management must look to someone from the outside. How about one or more of the concerns who supply materials or equipment that the manufacturer uses? Most of these companies have technical men and practical service men who are reasonably well informed along certain lines. Call on them to come in. If they can't or won't come, perhaps one or more of their competitor's men will be glad to get an opportunity to work with you.

As a matter of fact, some salesman or representative who you have been refusing to see or let come in—he may have a quick, easy and economical solution to your trouble, or he may suggest a plan for a new setup which will produce the results de-

Skin Irritations

EFFICIENCY IS SKIN DEEP

You can't expect top production efficiency when *skin irritations* plague your plant workers—causing *absenteeism* and *slow-downs*. TARBONIS has a long record in hundreds of plants for overcoming and guarding against the recurrence of *skin irritations*.

COMMON SKIN IRRITANTS

- Cutting Oils • Chrome Dyes
- Sodium Bichromates • Lime
- Metal Dust • Detergents
- Urea and Phenol • Naphtha
- Plastic Compounds

THE TARBONIS COMPANY, Dept. IF
4300 Euclid Ave., Cleveland 3, Ohio

Please send me a sample of **TARBONIS**

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____

BY_____ DEPT.____

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) New	$8.50
"CHEMICAL FORMULARY" (Vol. VIII)	7.00
"FINISHING METAL PRODUCTS"—2nd ed. (352 pages)	4.00
"PRACTICAL FURNITURE FINISHING" (112 pages)	1.25
"FURNITURE FINISHING" (543 pages)	4.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.00
"THE MIXING OF COLORS AND PAINTS" (292 Pages)	2.50
"WOOD FINISHING" (361 pages)	2.50
"NATIONAL PAINT DICTIONARY" (704 pages)	7.50
"MODERN POLISHES AND SPECIALTIES" (313 Pages)	7.50
"PRACTICAL COLOR SIMPLIFIED" (128 Pages)	5.00
"GRAINING"—Ancient and Modern (224 Pages)	4.00
"THE SILK SCREEN PRINTING PROCESS" (225 pages)	4.00
"INDUSTRIAL APPLICATIONS OF INFRA-RED" (200 pages)	3.50

Cash Must Accompany Order—Send for Descriptive Circular

INDUSTRIAL FINISHING
1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

Play Safe . . . . . Use NAZ-DAR SUPPLIES

★ You have no regrets when you use NAZ-DAR QUALITY Silk Screen material and supplies.

For a quarter of a century we have been headquarters for everything connected with the Silk Screen industry, building up an enviable reputation for fine quality merchandise and reliable service.

We make the famous YELLOW LABEL and BLUE LABEL Process Colors, WEATHERPROOF Silk Screen Enamel, Silk Screen Lacquer and many other products. Our line includes Decalcomania Paper, Frames, Squeegees, Cutters, etc.

For speedy, low cost printing, use NAZ-DAR Photographic or Hand Cut Plates.

★ *Write Dept. IF-1/50 for information or copy of our catalog No. 25.*

Naz-Dar Company

469-483 MILWAUKEE AVE., CHICAGO 10, ILL.

sired. After all, these men get around, and some of them are exceptionally well versed in the kind of work you are doing or propose to do. Of course, some problems and projects are so big that they really rate the employment of a dependable finishing expert or consultant or equipment engineer who can come in and spend anywhere from a few days to a few months full time on the job. While this kind of move will cost money, it can be tremendously profitable to the concern that employs the consultant. It can be the means of the firm improving the salability of its products, increasing its volume of business, getting out more work economically, and eventually making increased profits all the way around.

Industrial trade publications are a convenient source of information for suggestions and recommendations in reference to the solution of a variety of problems; also in reference to naming firms that manufacture or sell certain materials, supplies, equipment, etc.; and, in addition, the editor of an industrial publication can often supply names of competent and reliable consultants who are in position to handle certain assignments.

After all, competition is keen, and it is changing all the time. Frequently a well informerd consultant can come into your plant and spot numerous opportunities to improve upon the appearance, design and utility of your products; improve upon the materials and methods used in manufacturing; and make savings which are being completely overlooked by those closely connected with the business.

Make Furniture Users Finish Conscious

Through consumer advertising by paint manufacturers and promotional articles in women's magazines, and in the women's section of our daily and Sunday newspapers, the average Mrs. Housewife has become finish conscious. Through her, the average Mr. Householder is becoming more aware of the fact that furniture, and practically everything else he uses each day has been finished by the manufacturer.

With this consciousness and increased knowledge the demand for an attractive initial appearance and durability of finish will increase. With name brand furniture fast assuming the popularity of home washing machines, refrigerators and appliances, the makers of furniture will become known by the finish on their products. The manufacturer who is applying an attractive and durable finish will have nothing to worry about; others will have to improve their methods and materials.

All of this could have far reaching effects. For instance, the paint manufacturer who is supplying quality materials to a plant that is doing an excellent job of finishing might furnish that plant with an attractive card folder to be attached to the finished product. The folder would bear the name of the supplier, and would contain printed suggestions as to the care of the finish to preserve its attractiveness and durability. If the product has an excellent, durable finish, the manufacturer and the finish material supplier both will have every reason to be proud of their wares.

Where paint doesn't need to be atomized, as in flow coating, it can be sprayed like water, from nozzles fixed to the ends of paint supply pipes.

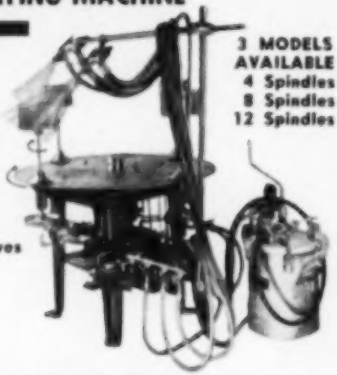
505 pages, illustrated
Price $8.00

This is the first comprehensive one-volume presentation of the chemistry, formulation, manufacture and applications of paints, varnishes, lacquers and enamels. There is a wealth of information on such subjects as exposure tests, viscosity, film properties, hiding power, special applications and surface preparations. A valuable addition to your personal library. Send for it NOW!

For immediate delivery, order from:

INDUSTRIAL FINISHING
1142 N. Meridian St., Indianapolis 4, Ind.

HOLLAND
automatic-pneumatic.
SPRAYING MACHINE



- Gives an even finish
- Speeds up production
- Improves quality of product

3 MODELS AVAILABLE
4 Spindles
8 Spindles
12 Spindles

For complete information, write for FREE folder "S."

J. HOLLAND & SONS, INC.
MANUFACTURERS · DEALERS
276 SOUTH NINTH ST · BROOKLYN, N.Y.

Does your product need
IMPROVED CLARITY? **HIGHER GLOSS?**
THEN TRY
Q S
AMAZING
FURNITURE BLOOM CLEANER
IT'S QUICK IT'S SLICK
IT'S PERMANENT
Simply wipe it on—wipe it off! QS becomes a part of the lacquer film—no afterbloom—no greasiness. For that new SLICK feel; for that new HIGH LUSTRE; for that richer than ever CLARITY—try **Q S**
Write for a free sample to
FRED A. BROWN COMPANY
GRAND RAPIDS, MICHIGAN

To "Measure" Color Accurately

AS WE enjoy the riot of color in magazines, modern textiles and paints or plastics, we may give little thought to the skill and instrumentation which developed these colors and maintains them to a given shade. Well-trained eyes are necessary for color matching in industry, but eyes become tired and lose efficiency. When absolute color standards are required they can be obtained with a spectrophotometer. This instrument compares any color, including black and white, with a standard white and expresses the color in terms of the wave length of its reflected or transmitted light. It does this in about two minutes, and produces a curve which is an absolute measure of the sample color.—AMERICAN CYANAMID CO.

To Save Stripping Off Checked Finish

SOMETIMES WHEN furniture is returned to a factory to be refinished (because perhaps it was hurried too much when finished originally) it is possible to avoid stripping off the original finish.

I have found that instead of going through all of this trouble and expense the finish may be saved by the skillfull use of crack eradicator. My method is to spray the piece with crack eradicator; leave it for four hours; spray on another coat of crack eradicator; then leave it over night. Next morning it can be wet sanded. Then spray on one or two coats of lacquer.

Then the surfaces can be rubbed and the finish will be as good as new. The crack eradicator will take out all the checking; even if the checking is discolored underneath and if you have age cracks, it will work.—C. O'LEARY.

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.

Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company

"The Tacky Wiper Specialists"

7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

C. E. Drew Represents DuPont in Iowa

Cecil E. Drew is the new Iowa industrial representative of the Finishes Division of the Du Pont Co., Wilmington, Del.

A graduate in chemistry at the University of Chicago, Mr. Drew joined the Du Pont Company in 1945 after 4½ years in the Army Air Corps in the European Theatre of Operations, where he attained the rank of major.

As an industrial sales serviceman with headquarters in Chicago, Mr. Drew has had considerable experience with the problems of manufacturers using finishing materials in large-scale operations. He has been assigned to Iowa to succeed the late C. D. Armstrong.

The Science of Wrinkle Finishing

Here is the first authoritative book covering all phases of wrinkle finishing. For the formulator, researcher or man in charge of a finishing department, this book is a step-by-step education on what he needs to know about wrinkle finishes.

Formulas for obtaining a high metallic gloss or suede-like finish are discussed from the break-down of the various oils used, to the synthetic types of oils which can be substituted.

The author, Mr. W. A. Waldie, is well qualified to write such a book since he is the inventor of many of the basic patents on wrinkle finishes. He has devoted much of his life to developing formulas and methods of application, as well as in research.

The book contains 204 pages 5x7¾-in. and is divided into 29 chapters. It has a durable cloth binding in light green and is lettered in gold. Copies can be obtained through INDUSTRIAL FINISHING at the low price of $5.00 each.

Cowles Conducts Metal Cleaner Clinic

"New Products for Better Cleaning" was the theme of a recent sales clinic conducted by Cowles Chemical Co., at its general offices in Cleveland, Ohio. All Cowles technical men in the Metal Cleaner Department participated in the 3-day session at which several new products were introduced to the sales staff for the first time. These developments are the result of many months of intensive research at the company's research and development laboratory at Syracuse, N.Y. Technical discussions were led by Dr. C. W. MacMullen, Technical Director, and Clarence G. Ozar of the Metal Cleaner Service Laboratory.

Classified Advertising

SALESMAN

In Milwaukee area looking for a line of silk screen paints. Address IF-698, care Industrial Finishing.

SALES MANAGER AVAILABLE.

Successful record as executive and salesman of industrial finishes. Address IF-699, care Industrial Finishing.

CONSIDERING POSITION IN U.S.A.

Canadian, age 32, married. All around hardwood finisher and painter. 13 years' experience on store fixtures and store painting. A graduate apprentice of Ontario Dept. of Labor. Desire position as sales service man. BERNARD J. SULLIVAN, 1415 Dundas St. West, Toronto, Ont., Canada.

POSITION WANTED.

Would consider traveling as salesman, or demonstrator, of industrial finishing materials, approximately (30) years' experience in industrial field. Have served as wood-finishing consultant to large material manufacturer, salesman, trouble shooter, shop supervisor, finish engineer; have studied art and decoration. Am considered color expert. Am congenial, and make good appearance. Will go anywhere. Address IF-700, care Industrial Finishing.

SALES MANAGER AVAILABLE.

Real knowledge and experience pre-war and current in sales of industrial finishes, manufacturing and management. Excellent in personal field sales as well as executive. Company must be well rated with adequate facilities and line. Compensation: Contract arrangement with minimum guarantee of $10,000 plus definite percentage over increased volume. Presently located in the east. Address IF-701, care Industrial Finishing.

FINISHER WANTED.

All around man who understands fine finishes; spraying; glazing; retouching; burning in, etc. Also leather tooling and laying leaf if possible, but not necessary. One who can take care of finishing room of small shop producing finest decorative furniture and mirrors. Excellent opportunity for right man. Give experience and salary expected. INVERNESS SHOPS, Madison, Ind.

INDUSTRIAL FINISHES CHEMIST

Wanted for midwestern plant of firm manufacturing complete line of lacquers and synthetics. Please send complete information concerning experience, education, etc. Address IF-707, care Industrial Finishing.

STAIN-FILLER FORMULATOR

Wanted by Midwestern manufacturer of complete line of wood finishing materials. Knowledge of wood lacquers preferable. Must be progressive and alert. Salary commensurate with experience and abilities. Address IF-710, care Industrial Finishing.

FINISHING FOREMAN OR SUPERINTENDENT WANTED

By Television Cabinet Plant located 50 miles from Philadelphia. Permanent position with future for production man. Furnish complete history, including previous connections. BOX 110, Bethlehem, Penna.

SYNTHETIC FORMULATOR WANTED.

Established manufacturer of industrial finishes requires chemist with sound background in the formulation of synthetic finishes. Must be alert to new technical advances. Salary commensurate with experience and abilities. Address IF-711, care Industrial Finishing.

SUPERVISOR WANTED

For plastic decorating, familiar with all methods of decorating, including silk screening, masking, printing, etc., for a large manufacturing company. Must also be capable of estimating quantities. When replying, please enclose a self-photograph, and state all qualifications, stating age, experience and education. Address IF-702, care Industrial Finishing.

WANTED.

Director of industrial finishes development, to assume complete charge of laboratory division of established Philadelphia manufacturer of paints, enamels, lacquers, stains, fillers and specialty coatings for product finishing. Position will require extensive experience in formulating and servicing industrial finishes. Write, giving us all particulars concerning your background, experience and salary required. All replies will be kept strictly confidential. Address IF-703, care Industrial Finishing.

WANTED.

Chemist currently working in laboratory on metal decorative coatings for such items as closures, cans and miscellaneous prefabricated finishes who is desirous of getting into sales. Our company has its own metal decorating laboratory complete with highly skilled technical staff. State experience and qualifications in detail. Only highest calibre applicants will be considered. Excellent opportunity for high earnings in this selective sales field. Address IF-709, care Industrial Finishing.

SALESMEN WANTED.

Excellent opportunity for industrial coatings salesmen. Must be experienced and have good following. We can guarantee excellent materials at competitive prices. Well organized laboratory and plant. Territories; New England, Middle Atlantic and Southern States. Give details in full. Address IF-705, care Industrial Finishing.

EASTERN SALES REPRESENTATIVES WANTED.

A progressive eastern manufacturer of lacquers and synthetic finishes with a complete line and fine reputation for quality has excellent opportunities for experienced salesmen for New York and New England territories. All replies confidential. Address IF-704, care Industrial Finishing.

SALESMAN WANTED

For Philadelphia, Penna., Metropolitan New York and New England States for Industrial coatings. Complete line of Nitrocellulose and Resin Finishes. Established Newark, N.J. concern. Excellent opportunity. Address IF-692, care Industrial Finishing.

INDUSTRIAL FINISHES SALESMAN WANTED

For state of New Jersey. Splendid opportunity for right man. Write, giving full details as to experience, age and education, to Industrial Sales Department, PRATT & LAMBERT-Inc., 75 Tonawanda St., Buffalo 7, N.Y.

CHIEF CHEMIST WANTED.

This position is open for a qualified individual who wishes to associate himself with a well established firm manufacturing a complete line of lacquer and synthetic finishing materials in the Metropolitan New York area. Please send full particulars concerning experience and qualification. All replies treated in strictest confidence. Address IF-706, care of Industrial Finishing.

AN UNUSUAL PARTNERSHIP OPPORTUNITY.

We manufacture a complete line of lacquers and synthetics in a modern plant located in the east. Our present sales volume is both stable and profitable.

The man we wish to contact should be an experienced, successful industrial finishes salesman with an established volume of industrial business. He should desire the rewards and security of proprietorship. The offer is attractive and does not require initial capital investment. Sales performance will be the principal determining factor. Our organization knows about this ad. When you write give complete details regarding background, territory and type of plants covered. All replies will be confidential. Address IF-693, care Industrial Finishing, Indianapolis 4, Indiana.

INDUSTRIAL FINISHES CHEMIST WANTED.

Services required in eastern division of firm manufacturing all types of industrial finishes. Please send full particulars concerning qualifications. Address IF-708, care Industrial Finishing.

WANTED TO BUY.

Will Buy your dirty Thinners and Solvents. Send sample or letter giving approximate contents and solids. Address THE JOHANN CO., 633 E. 138th St., Dolton, Ill.

FOR SALE.

Two overhead monorail conveyors. One 500-ft. Link Belt 4-in. complete, turns, drive, trolleys, track, etc., $2.50 per ft. One 500-ft. Palmer-Bee 4-in. I Beam Type complete as above, $10.00 per ft. Address W. D. MEAGHER, care the ARTCREST MFG. CORP., 1856 N. Kostner Ave., Chicago 39, Ill.

FACTORY FOR SALE.

Conveniently located in Newark, N. J. industrial section. Ample transportation. One two-story brick building 30x100-ft. Sprinklered. Equipped with steam heat Scott Marine Boiler 125#. One one-story fireproof modern concrete building 30x110-ft. Concrete office building 30x30-ft. Three iron buildings, 10,000 sq. ft. yard space with street entrance. Forty-foot brick stack 30-ft. wide with five boiling units. Price, $65,000 for prompt sale. Address IF-695, care Industrial Finishing.

FORD CUPS

THE VOL-U-METER COMPANY

Buffalo 16, New York

Write for Catalog of

Paint Testing Apparatus

GARDNER LABORATORY

Bethesda 14, Md.

IDEAL TACK RAGS

FOR A PERFECT FINISH

Immediate Delivery

IDEAL CHEMICAL COMPANY

1689 Lee Road Cleveland 18, Ohio

INDEX to Advertisers

Advance Paint Co. ..... Third Cover
Allied Finishing Specialties Co. 6
American Richwood Products Co. 102
American Varnish Co. 83
Argenta Products Co. 110
Atlas Powder Co. 71

Barrett Co., Leon J. 101
Baughn Chemical Products Co. 125
Binks Mfg. Co. 104-105
Brown Co., Andrew 32
Buffalo Forge Co. 41

Capitol Machine Co. 61
Central Paint & Varnish Works, Inc. 24-25
Chemco Products, Inc. 8
Claremont Waste Mfg. Co. 91
Classified Advertising 126
Clinton Co., The 19
Commercial Solvents Corp. 87
Cover, H. S. 109

Day & Co., James B. 107
DeBurgh Conveyors 88
Despatch Oven Co. 29
DeVilbiss Co., The 14-15
Dolan & Co., The V. J. 5
Du Pont de Nemours & Co., E. I. 64-65
Duralac Chemical Corp. 42

Egyptian Lacquer Mfg. Co. 47

Fostoria Pressed Steel Co. 7

Gardner Laboratory 127
Grand Rapids Varnish Corp. 2

Hilo Varnish Co. 53
Holland & Sons, J. 124

Ideal Chemical Co. 127
Industrial Chemical Development Corp. 103
Interchemical Corp. ..... Second Cover
Industrial Chemical Products Co. 39

Jensen Specialties, Inc. 23
Johnson Engineering & Sales Co. 93

Kirk & Blum Mfg. Co. ..... Back Cover
Kirker Chemical Co. 117
Klem Chemicals, Inc. 43

Lanly Co., The 8
Lawrence-McFadden Co. 67
Lilly Varnish Co. ..... Front Cover
Logan Engineering Co. 62
Lowe Brothers Co., The 36-37

Maas & Waldstein Co. 63
Mahon Co., The R. C. 50-51
Mearl Corp., The 111
Midland Industrial Finishes Co. 22
Miracle Paint Rejuvenator Co. 108
Miskella Infra-Red Co. 110

National Air Sander, Inc. 80
National Lacquer & Paint Co. 113
Naz-Dar Co. 122
New York Woodfinishers Supply Co. 97

Oakite Products, Inc. 35
O'Neil Duro Co. 16

Perfection Paint & Color Co. 78
Peters-Dalton, Inc. 31

Randolph Products Co. 95
Ransburg Electro-Coating Corp. 55
Reliance Varnish Co. 77
Renner Co., George 98
Rockford Varnish Co. 89
Ross Engineering Corp., J. O. 1

Schaefer Varnish Co. 75
Schmeig Industries, Inc. 13
Shell Chemical Corp. 115
South Florida Test Service 110
Special Chemical Corp. 113
Spruance Co., The Gilbert 69
Standard Varnish Works 21
Stille-Young Corp., The 102
Sundstrand Machine Tool Co. 99

Tarbonis Co., The 121

United Chromium, Inc. 59
United Lacquer Mfg. Corp. 49

van Allen & Co., L. R. 108
Varnish Products Co. 112
Vol-U-Meter Co. 127

Wilkinson Equip. & Supply Co. 98
Wilson-Imperial Co. 9
Wolverine Finishes, Inc. 55

Advance service works around the clock!

There's no point in keeping a finishing problem to yourself when our representatives are available at any time of the day or night to help you find the solution.

For Advance service doesn't come to a halt at 5 o'clock . . . either in the field or in our modern factory.

Every representative, every technician, every Advance facility is available around the clock, if necessary, to assure a speedy solution to your finishing problem.

Why not send your problem to us today—by phone, wire or letter?

Advance PAINT COMPANY

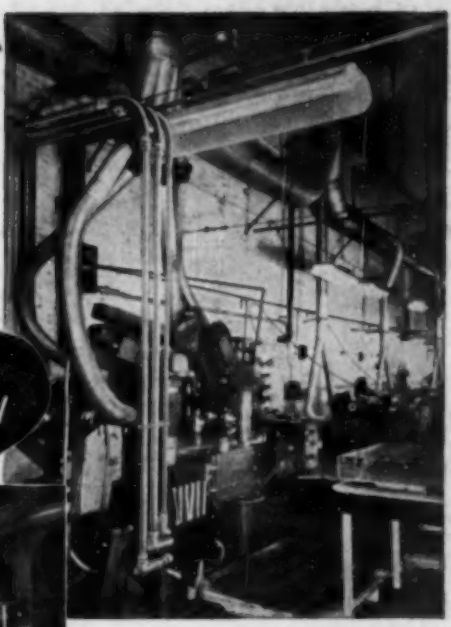
Indianapolis Indiana

MANUFACTURERS OF INDUSTRIAL FINISHES

3 Problems—1 Solution

... KIRK & BLUM!

Below: High velocity, double-slot hoods effectively pick up fumes as formed, remove them through corrosion resistant piping and exhausters.



Above: Dust Collecting System; note flexible connections permitting movement of automatic buffing and polishing machine. Below: Two-pass monorail conveyor through direct fired gas oven.

Illustrating Kirk and Blum's wide experience and money-saving ingenuity are these installations in the plant of a large auto accessories manufacturer. Three separate systems eliminate fumes from pickling and plating tanks, control dust in polishing and buffing operations and provide accurately controlled heat for enamel baking in a conveyorized overhead oven.

These are examples of the hundreds of systems designed, fabricated and installed by KIRK & BLUM. Turn your dust control, fume removal or low temperature oven problems over to experts with 40 years' experience.

FOR CLEAN AIR . . . THE INVISIBLE TOOL

KIRK AND BLUM

DUST AND FUME REMOVAL ● INDUSTRIAL OVENS

THE KIRK AND BLUM MANUFACTURING CO., 2831 SPRING GROVE AVE., CINCINNATI 25, OHIO